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# RE-INVENTING OUR LIVES®

Handbook for Socio-Economic “Problem-Solving”

MOHAMED BUHEJI

authorHOUSE®

AuthorHouse™ UK  
1663 Liberty Drive  
Bloomington, IN 47403 USA  
www.authorhouse.co.uk  
Phone: 0800.197.4150

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**It is hard to imagine that anyone who lives this life doesn't really try to re-invent it. Yet Most of us don't!**

**This Handbook is for the most of us and for those of us who don't realise the power of 'Socio-Economic Problem-solving' and its blessings to a better human journey.**

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# CONTENTS

<b>Foreword: Recognising Lives Around</b>	
<b>Socio-Economies</b> .....	xi
<b>Introduction</b> .....	xvii
<b>I. Principles of Problem-solving</b> .....	1
<b>Ch 1- DARE</b> .....	3
<i>Assessing &amp; Reinventing Our Socio-Economic Issues</i> .....	3
<b>Ch 2 – DISSECT</b> .....	45
<i>The Anatomy of Problem-solving</i> .....	45
<b>Ch 3 – EXPLORE</b> .....	95
<i>Practicing Socio-Economic Observation</i> .....	95
<b>Ch 4 – REALISE</b> .....	147
<i>Psychology of Problem-solving</i> .....	147
<b>II. Strings of Socio-Economic Problem-solving</b> .....	203
<b>Ch 5 – VISUALISE</b> .....	205
<i>Empathy &amp; Reflection in Problem-solving</i> .....	205
<b>Ch 6 – EXPERIMENT</b> .....	233
<i>Curiosity &amp; Learning in Problem-solving</i> .....	233
<b>Ch 7 – EXCITE</b> .....	275
<i>Inspiration Engineering &amp; Problem-solving</i> .....	275
<b>Ch 8 – INNOVATE</b> .....	309
<i>Breakthrough in Socioeconomic Solutions</i> .....	309



### III. Differentiation of Socio-Economic Solution

<b>Outcome</b> .....	377
<b>Ch 9 – SIMPLIFY</b> .....	379
<i>Complex Problem-solving &amp; Differential Diagnosis</i> .....	379
<b>Ch 10 – TRANSFORM</b> .....	419
<i>Behavioural Economics &amp; Problem-solving</i> .....	419
<b>Final Words</b> .....	477
<b>Reference</b> .....	481
<b>Appendix</b> .....	487
Appendix (1) Socio-Economic Conditions as a Reference for Problem Solution Outcomes.....	487
Appendix (2) Examples of Socio-Economic Problem-solving Labs .....	494
Appendix (3) Exercises to Re-Invent Our Lives through Engagement with Socio-Economic Problems .....	521
Appendix (4) Problem-solving Labs Accredited Programs.....	529
Appendix (5) Brief on Socio-Economic Problem- solving Labs Workshop .....	530
Appendix (6) Criteria for Socio-Economic Problem-solving Labs Workshop .....	534
Appendix (7) Template of Proposed Socio- Economic Problem Solution.....	536
Appendix (8) Main Stages for Socio-Economic Problem Solving – to Re-invent Our Lives .....	537
Appendix (9) Detailed Content List.....	544
<b>Brief about the Author</b> .....	551

## **Keywords**

Problem-solving, Socio-economy, Complex Problems, Inspiration Economy, Resilience Economy, Future Foresight, Youth Economy, Inspiration Engineering, Perseverance, Persistence, Visualization, Observation, Absorption, Realization, Simplicity, Outcome, Breakthrough Thinking, Innovation, Creativity, Curiosity, Learning, Differential Diagnosis, Behavioural Economy, Empathy, Nudge and Inspiration Labs.

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# FOREWORD

## ***Recognising Lives Around Socio-Economies***

The world is full today of new challenges and unprecedented problems. These problems vary from being political to economic, to social, to technological, to environmental and then legal, or a collection of some or all of them.

*As the modern societies are becoming more complex, every day, where information is becoming very difficult to contain, or manage with its high availability and accessibility, our capacity to handle it should develop too in the same speed.* The unstable dynamics of life issues are challenging and prompting communities to constantly rethink, switch directions and challenge the socio-economic problem-solving strategies. Thus, it is increasingly important to develop strategies that apply new knowledge to the complex situations which can be formalised in the day-to-day activities. *The dynamics of the socio-economic complex situations prompt the problem solvers to relate any new knowledge and development to the 'style of thinking' not the 'competency of problem-solving'. Thus the problem solvers would be able to abstract and conceptualise the problem story in a novel way if they manage to think in this unique way.*

*This Handbook of Socio-Economic “Problem-solving” targets to re-invent the way we think and deal with challenges in our life journey through re-inventing how our mindsets can visualise the purpose of complex ‘problems-finding’ before starting the journey of ‘problem-solving’.* The handbook focus on building a renewed mentality that gives the reader a comprehensive view of dealing with and exploring solutions to problems and challenges through habits and behaviours that deal with problems and challenges.

*The handbook work first in building high capacity of the problem solver to understand the values of dealing with complex community problems. Much of the work here focus on increasing the efficiency of ‘problem-finding’, besides the quality and readiness to the ‘problem-solving’ outcome.* Gradually the increase of this capacity create a shift towards reducing the cost of the problem in stages, thus creating less extrinsic resource dependent business-model solutions. This exercise enhances our ability to have both reverse- and creative-thinking which would help us to solve problems through transforming the opportunities into final outcome solutions.

Establishing life-purposefulness while dealing with socio-economic problems, is highly targeted in the approaches of this handbook. The experiences and the case reviewed shows that working with a mind that have life-purposefulness helps to capture the opportunities and take the right decisions regarding each problem or challenge inside a chronic community issue. Thus through setting ‘life purposefulness’, the problem solvers could set more accurate exploration that would help to optimise their internal strengths towards handling the most complex problems.

As a long-time advocate of socio-economic problem-solving to the benefit of discovering our human capacity, I believe *this handbook would help to identify one of the secrets of the next evolutions needed for developing our communities and its related institutions and*

*societies*. It is a handbook that would make the reader see many ways of dealing with different socio-economic problems and challenges in new scientific ways and with full persistence and perseverance.

In the ten chapters presented in this handbook, the reader would travel through a journey on how to re-invent our socio-economies through realising first the principles of problem-solving along its core strings and differentiation tools. As shown in Figure (F-1) the principles of socio-economic problem-solving starts with assessing the Socio-Economic issues as the main way to re-invent our lives. This first chapter is called DARE as it challenges the readers to interact with their socio-economies problems and challenges.

The constructs and the anatomy of socio-economic problem-solving can help to establish a good start and a focus on what is the essence of the socio-economic problem-solving. Therefore, chapter two was called Dissect, as it invites the reader and problem solver to build the attitude to dissect a problem through stages of 'problem-finding' before start solving it. Chapter two goes much deeper in addressing what are the constructs of effective socio-economic problem-solving. Then chapter three establish the best ways of using socio-economic observations, through the title of Exploration. In order to complement what we called in Figure (F-1) as Problem-solving Principles, the fourth chapter had to be about the detailed psychology of problem-solving and including how the brain and heart react to problem-solving attempts.

The core strings of socio-economic problem-solving brings in four other chapters that encourage the reader to visualise, experiment, excite and innovate through breakthrough solutions. Chapter five follows the realisation chapter, thus the focus here is more on empathetic thinking and ways of doing the reflections during problem-solving journey. Following the attempt of visualisation, the

handbook in chapter six shows the importance of experimentation through curiosity and learning. As we approach chapter seven the role of inspiration economy labs and inspiration engineering in creating best problem handling outcome become more clear. Chapter eight shows how the innovating breakthrough solutions can result from the sum of three practices: ‘effective visualisation + experimentation + focus’. These three practices create what we call ‘Problem-Solving Labs’ that comes from a concept we have developed called ‘inspiration engineering’.

In order to ensure the differentiation of the socio-economic problem-solving tools, both chapters nine and ten focus on how to simplify and transform the problem solution. In chapter nine the utilisation of differential diagnosis tools to deal with complex problems are discussed in detail. In chapter nine the utilisation of differential diagnosis tools to deal with complex problems are discussed in detail. Then finally, chapter ten present how the latest behavioural economics labs help to develop better outcomes for some of the socio-economic problems we are facing today.

Figure (F-1) Illustration of the relation of the Ten Chapters of Socio-Economic Problem-solving



Finally, it is worth to keep in mind the appendices in this handbook are meant to trigger our will to go the field and start or continue more socio-economic projects. So keep referring to these appendices as we will be doing so too in this handbook. Appendix (1) give the problem solver the ability to visualise the outcome of any socio-economic solution proposed before starting the solution process. *While Appendix (2) cover a comprehensive list of more than fifty socio-economic problems solved with the summary of models created.* In Appendix (3) the readers are invited to try the exercises that would help them to visualise how they could 're-invent our lives' through engagement and utilisation of the socio-economic problems encountered. Exercise (1) help to show how to extract opportunities through socio-economic formulas, while Exercise (2) help the reader to set the socio-economic program that would shift towards empathetic thinking. In exercise (3) the reader would learn how to do a capacity assessment of the socio-economic problem wealth which are discussed in detail in Chapter (1) as part of Wealth Vectors and later used in each case study presented at the end of each chapter. As we reach exercise (4) the key performance outcomes using 'Maturity Scale' would be used. Finally, exercise (5) helps to practice the most important thing in dealing with any socio-economic problem that is re-stating it to understand the essence of its existence.

Appendices (4) and (5) are meant to give the reader more empowerment about the type of problem-solving labs accredited programs that are provided by (International Institute of Inspiration Economy) as an example of the available socio-economic resources. Appendix (5) give more details on the Socio-Economic Problem-solving Labs that could be carried out in the organisations by experts in socio-economic problem-solving.

Appendices (6) and (7) work as a guideline for the reader about when and how to certify reaching a socio-economic outcome that



would be sustained and could be generalised as a reference world class model. Criteria for socio-economic problem-solving labs are discussed in Appendix (6). While Appendix (7) gives a template of proposed socio-economic problem solution. Coming towards the end, Appendix (8), which is an appendix that relate all the major constructs of the handbook and its main stages and steps. This appendix helps us to see the ‘big picture’ of how we re-invent our life and how the different parts in the handbook and in the socio-economic problem solving journey are related.

Finally, the utmost goal of all these chapters, case studies and support material in this handbook are to create for you as a reader, and hopefully, as a practitioner, the most suitable environment of re-inventing your life, as you attempt to solve your community’s problem. Therefore, Appendix (9) comes to list all the main heading in the handbook to appreciate all this journey. It is an experience that can’t be matched by words, so please enjoy it.

# INTRODUCTION

Problem-solving have always been related to many concepts as creativity, breakthroughs, development, disruption, innovation, learning, knowledge, agility, resilience and most of all inspiration. However, this handbook creates a deep-dialogue about the many missed-opportunities relevant to giving differentiations that can happen in innovating in socio-economic problems solving. In this sector, where our social life affects our economic outcomes and vice-versa, we never clearly had focused efforts of re-inventing our lives through re-inventing the way we deal with our communities and organisations chronic problems. *Complexities and challenges have never been carefully considered as sources of insights, persistence, perseverance even though they might lead to better visualization of how we deal with life over time. Yet history and life till us without these complexities and challenges we humans would have been still living in cages and dark eras.*

*As the modern societies are becoming more complex, every day, where information is becoming very difficult to contain, or manage with its high availability and accessibility, our capacity to handle it should develop too in the same speed.*

*In this Handbook we investigate the complexity of socio-economic issues problem-solving journey from multi-disciplinary perspectives. The structure of the handbook helps us see how problem-solving labs contribute to its development and in tackling complex socio-economic issues. An investigation of the problem statements in the*

different problem-solving labs carried out by the author in the last five years, in different countries and conditions, is done to evaluate the importance of problem statements and new way of thinking in creating effective community solutions. Breakthroughs in this field bring a solution that is a source for discovering more opportunities and creating inspiration currencies that creates better social and economic results and outcomes. Appendix (2) represent more than fifty problem-solving labs that have been successfully implemented by the author. Besides, these labs being referred to frequently as examples of the mechanisms of the problems solved.

*There are still today problem-solving techniques that are too scientific, or technical, or complicated and specialised, yet proven to have limited sustained influence compared to fast evolving world needs and demands. Redefining the anatomy of problem-solving helps to see how to create innovation and inspiration in its process. The process of problem-solving need to be investigated from the way it handles the constraints and challenges of the socio-economy. The aim of this handbook is to help you visualise how can the problems and challenges of the communities be turned into possible sources for discovering new opportunities.*

Despite the development of humanity in many areas, many countries in the world still admit that it has yet to reach the Millennium Development Goals (MDG's), while many developed and developing countries are striving to reach Sustainable Development Goals (SDG's). This means that humanity is not yet really as developed as it should be in tackling socio-economic challenges and/or problems as reported by many latest United Nations and UNDP reports. In fact, the high level reports produced on behalf of the World Economic Forum shows that the world couldn't solve many issues as poverty, rising unemployment or income inequality, weak financial systems, gender inequality,

low long-term planning and investments besides last but not least the rise of non-communicable diseases (NCDs) to the prohibitive costs of care, particularly in developing countries. Appendix (2) gives many examples of how we can re-invent our communities live and the world and achieve the targeted SDG's.

*The dynamics of the socio-economic complex situations prompt the problem solvers to relate any new knowledge and development to the 'style of thinking' not the 'competency of problem-solving'. Thus the problem solvers would be able to abstract and conceptualise the problem story in a novel way if they manage to think in this unique way.*

*Literature still has a gap in addressing the details of the cognitive processes and the psychological interactions that occur during the operation of problem-solving related to complex socio-economic issues and the problem statement that follows that.* Therefore, this comprehensive handbook investigates and focus on studying the best practices of problem-solving starting from problems definition and statement until the stages of the readiness to deal with the socio-economic problem. This means we need to understand the problem anatomy, besides its process and structure in the most suitable and possible cognitive and psychological way so that to evaluate its contribution.

In this handbook, we are going to explore many new innovative techniques. We will be introduced to the types of 'problem sensitivity' and the type of socio-economic problem diagnosis. i.e. examples of the physical, the analytical, the forecasting and the model piloting diagnosis. *We would try to see how the socio-economic issue environment, demographics, level of complexity and sources of frustration create the problem wealth.* Besides, socio-economic issues, wealth would be discussed and presented from different perspectives. The functionality, the conflicts and the different interactions are the constructs and part of the actual wealth of community problem.

This handbook also introduces briefly how we search for breakthroughs and what are the issues that shape the socio-economic problems anatomy. We try to show some types of problem road-blocks and how to deal with the complexity of a problem based on its magnitude. Here the mental blockages generated by the different socio-economic problem complexity are illustrated here which help to show the importance of 'problem-finding'.

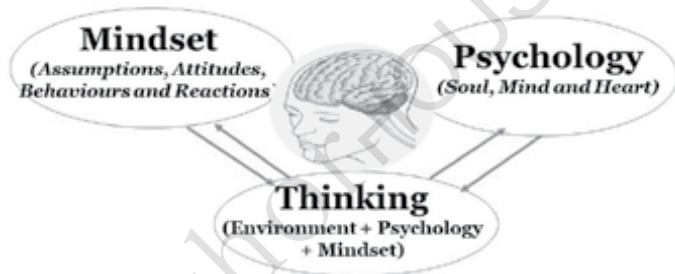
In this journey, we learn together also the role of observation and its philosophy in creating the socio-economic visualised story. *This handbook is therefore full of the type of opportunities that are generated from the problem-solving journey starting from the first field visit.* Stages of NASA problem-solving is given as an example to how culture of problem solving can be established in organisation regardless of its complexity.

*Gamification also plays a role setting the best practices in the sustained solution for a socio-economic issue.* Many examples of 'behavioural economics' (BE) successes in dealing with socio-economic problems are discussed. To give the reader even more deeper understanding of the expected role of BE in the future many comparative studies are presented in relevance to what Nudge and Inspiration Labs have done so far to improve the Social Welfare and the Quality of Life through the collaborative work of the governments who started to understand the importance of field before creating decisions in relevant to any community issues.

The key success factors (KSF's) for effective problem-solving in this handbook are discussed based on many actual socio-economic case studies. The KSF's here, as shown in Figure (I-1) are the fitness of the: Mindset, Psychology and Thinking. i.e. all the three need to be connected in order to manage most complex problems. The first KSF for a unique problem-solving is the

mindset which helps to manage the assumptions, the attitudes, the behaviours and reactions that are built around the problem and how we deal with opportunities and outcomes. The second KSF is the readiness of the problem solver psychology, where it is the enabler that brings the soul, the mind and the heart together while dealing with problem challenges. The third KSF is the thinking which comes as a result of the environment, the psychology and the mindset that manage the problem. It highly essential that the reader brings in Figure (I-1) while reviewing all the cases discussed in this handbook.

Figure (I-1) Key Success Factors for Effective Problem-solving



Reviewing Appendix (8), which relate all the major constructs of the handbook we can see the importance of taking Figure (I-1) into consideration. The following five objectives were defined for the Handbook of “Re-Inventing our Lives” as can see from Appendix (8):

- 1- Establish a culture that would appreciate and realise what and why organisations and communities need to be involved with socio-economic issues.
- 2- Learn how to shift from a growth-based economy problem-solving practices to development-based economy problem-solving practices.

- 3- Build more intensively build the capacity to explore the socio-economic issues, problems and challenges utilising a mindset that expose the organisations and communities “intrinsic powers” in solving complex problems.
- 4- Know the benefits of problem-solving and how it reflects on the communities ‘Goodwill Value’.
- 5- Learn how to generate inspiring insights from scientific problem-solving techniques.

The handbook is divided into three main principles that would make socio-economic problem-solving labs more feasible to achieve by every keen problem solver or community leaders. The first principles prepare the mindset to see problem solving from different perspectives that we usually acquainted with. The second principle work on emphasising the differentiation that socio-economic problems solving can do to our lives. *The last principle focus on how we differentiate the outcome and create legacy through effectively addressing its stories. This principle should help to establish sources of opportunities for each problem through fields investigated. This final principle is focused on creating reference models for success stories on how to overcome socio-economic problems. These reference models would create a differentiated meaning to our capacity in an era where humans are challenged by robots, unless they show their differentiated passion and their unique capacity to influence positive changes.*

# I. PRINCIPLES OF PROBLEM-SOLVING

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# CH 1- DARE

## *Assessing & Reinventing Our Socio-Economic Issues*

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## Socio-Economic Issues as a means for Re-Inventing Our Lives

In this very first chapter, *the handbook challenges the readers to be more engaged in their socio-economic problems so that they re-invent themselves and their community lives.* In order to pave the way to this challenge, let us first define what we mean by socio-economic issues, then we'll explore more how these issues can have a major influence in knowing our lives more.

Once we review the basis of 'socioeconomics' we find that it is a multi-disciplined social science that studies how economics and social activities, issues and challenges are shaped. Studying these socio-economic issues help to define more how we live personally and how our actions can lead to the betterment of our communities progress and development.

When we study socio-economic issues we are actually studying the way our lives are planned. A socio-economic issue is a problem that is usually divided into three categories relevant to our life: social issues, cultural issues and economic issues. *With more realisation of socio-economic problems, we can improve the different decision-making that influences the way we see and utilise the demographic information around us.* Also, we can improve the way we benefit from our knowledge access to solving issues that improve our life journey. This is maybe an explanation of why we see more and more today many people view Netflix documentaries and also having more youth are involved in socio-economic projects. People are seeing that such involvement makes a differentiation to their realisation of what is the meaning of life.

*This Handbook of Socio-Economic "Problem-solving" targets to re-invent the way we think and deal with challenges in our life journey through re-inventing how our mindsets can visualise the purpose of complex 'problems-finding' before starting the journey of 'problem-solving'.*

*Much of what is thought to be a problematic behaviour in our socio-economies are actually a source of opportunities.* For instance, the problematic behaviour of medical consultants in many general hospitals in relevance to the issue of poor patient management, or low competency of bed management led to unavailability of emergency beds as discussed in *case (7)* of the secondary care issues in Table (A-2-1) in Appendix (2). The negligence of the medical consultants led to focus on the opportunities that could come from the medical resident doctors and the ward nurses, would lead to the sub-cases in *Case (7)*. There are many similar problems in Table (A-2-1) where the focus and emphasis on one type of behaviour made us discover other lost opportunities that we could capitalise on to build an effective problem solution.

*Sources of a challenge to a problem complexity and the unproductive socio-economic initiatives attempt help to create change without adverse effects. To tackle a problem without creating an additional problem itself is considered to be a socio-economic issue.* Hence, any socio-economic issue needs to be decoded into comprehensible actions that can be achieved or narrowed as a social or economic discrepancy between an 'actual state of affairs' and their 'desired state of affairs'. Therefore, the socio-economic problem-solving aims to reduce or eliminate this discrepancy gap or even create a differentiated development for the tackled issue from its existence.

*Most often socio-economic issues would come from trying to improve the actual state of affairs by finding an answer to a difficulty or a solution to a problem.* Socio-economic problems can be grouped into categories by the outcome aimed to improve the living status of any community. i.e. it can be around achieving indicators as SDG's, or improving the quality of life, or spreading certain attitudes or behavioural practices and so on.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they integrate to influence re-inventing our life.

## **Types of Socio-Economic Issues**

When tackling a socio-economic issue, we need to observe and then understand every move this issue establishes, or initiates, or inspires, or even later influence. This creates sets of more complex problems related to the quality of life, the way lifelong learning is practised, the community stability and the social coexistence that influence the fibre of the community.

*The more we explore a problem of socio-economic issues we are actually maximising the return of the knowledge that the problem contains. This exercise also would help to raise the cognitive insights that can be formed within the problem.* Hence, the first phase of analysis which is a phase we call 'problem codification' is meant to understand the connections of all the information related to the problem inputs and outputs. Understanding this problem codification help us to see the type of learning and/or unlearning that can be drawn from such a problem.

In an economy that is based on knowledge, people are dealing daily with a number of influential problems that affect their decisions and paths in this life and which contribute to their successes or failures. This requires us to have a higher degree of focus that starts with monitoring our mindsets in order to realise how the focus on certain problems caused it to change over a certain time period.

*To renew the human 'learning capacity' and to extract the best creative, or possible exploration in the socio-economic problem-solving journey, one needs to feel the sense of excitement the problem creates*

*from the initial phase of contact.* Without this level of excitement, or thinking, the human convictions, be it from the mind or the heart or the spirit will not change and we will not have new options and alternative paths that will distinguish our problem solutions or proper 'judgement' decisions. This level of excitement can be achieved and sustained mainly by the practice of 'visualisation'.

*To assess the causes and benefits of a well-being problem, as one of the important socio-economic issues, we need to understand what prevents the community from deteriorating,* this can be seen clearly in *Cases (3), (6), (7), (8) and (9)* in Appendix (2), for instance. This means we need to assess what are the capacities within the communities and nations that would help to bring it to another level of wellbeing.

For any successful socio-economic problem-solving journey, the society need to visualise how to transform its capacity towards more sustainable and confident future. Therefore, the chapters focus on using empathetic thinking to make any problem solver realise the multiplicity of possibilities and directions for the complex solutions. It is this thinking that would differentiate our solution to the level of interdependence. *With empathetic thinking during problem-solving, we can bring 'reverse thinking' or call for 'radical change' that would be more associated with the human values and thus discover more hidden socio-economic opportunities.* Figure (A-2-1) in Exercise (2) in Appendix (3) should be always considered by the problem solver as a visualised guide of shifting the status of the community in the socio-economic issue tackled.

## **Establishing Socio-Economic Thinking to Re-invent Communities Lives**

Throughout socio-economic history, many types of thinking have been used to solve complex problems in order to re-invent communities

lives. For example, when people are aware of the consequences of social acts, they generate alternatives and consequences for potential socio-economic problem solutions. This type of thinking has been used mainly by governments to come up with better alternatives and solve chronic issues in improving the health status of the country citizens. This type of thinking is called 'Consequential Thinking'. However, as we know most of the government problems, like unemployment, need more advanced thinking than consequential thinking where considerations for social-appreciation and community motivation are taken into consideration.

*Unemployment is a type of a socio-economic problem that involves the realisation of the feelings and how they cause actions. This type of thinking is called 'Causal Thinking'. Therefore, in case (22) in Appendix (2), the instability in the unemployment rate was eliminated through the stratification of human capital data and building models in specific industries helped to address essential socio-economic needs. Many lives were re-invented through minimised unemployment rate through effective counselling and proper sourcing for the type of job opportunities.*

*Once the problem solver has the capacity to deal with complex community problems, we get better quality and more efficiency in 'problem-finding' and higher readiness in 'problem-solving' that leads to outcomes that carries less dependence on extrinsic resources in the proposed business-model solutions.*

*The gap and the limitations of many communities and government or non-government organisations thinking establishes, therefore, a call for more advanced socio-economic thinking that could help to re-invent our lives. To reach the required thinking proper definition of each socio-economic problem and realisation of its possible socio-economic outcomes is targeted throughout this handbook. Since most the socio-economic solutions that created legacy was created as a result of effective problem diagnosis, the handbook dedicate great deal to explore the secrets of diagnosis. Once the*

*socio-economic problems are defined, the current (actual) socio-economic state of the problem need to be precisely assessed. Then the desired (ideal) state of a socio-economic problem outcome would need to be set towards reinventing the total community life again.*

Moving the socio-economic solution from ‘actual expected’ to a ‘desired state’ of affairs improve the critical ability of the problem investigator to change the thinking that alters the ‘current state’ of affairs. This thinking help to properly evaluate the outcome of applying the selected problem-solving strategies and whether they were properly defined to help create better developments.

There are different sources of socio-economic issues thinking that can help to re-invent our lives, however, most of them as shown in Figure (1-1). Figure (1-1) follows a certain sequence that would help to build an outcome, or at least build a model for a solution that can be generalised. *Most of the complex community-related issues are initiated by understanding ‘patterns of problem structure’ represented by its ‘activity profile’. Once a problem ‘activity profile’ is identified, focused problem patterns would be exploited as ‘hidden opportunities’ in the socio-economic issue. Then ‘problem vectors’ would help to analyse the ‘problem factors’ and its trends thus building different possibilities for ‘socioeconomic constructs’.*

Figure (1-1) Sources of Socio-Economic Thinking that help to re-invent our lives.





Defining 'problem factors' would help to shape the final proposed solution and its proposed model. The model of a socio-economic solution would mean that a total case study is ready to be generalised, deployed and implemented in other areas of similar socio-economic conditions. Each 'Case Study', represented at the end of each chapter and in Appendix (2) carries with its story and an alternative 'inspiring socio-economic solution' which would help to 're-invent the way our community lives' and sustain. They all carry within them future development strategies that many communities and countries can achieve with minimal dependency on resources. Figure (1-1) shows the relation between assessing the socio-economic issues and the way the cases of problem-solving labs are presented in this handbook.

In each of the ten chapters in this handbook there is a case study that has summarised the uniqueness of the main socio-economic problem solution through the following points:

- A) Summary of the Socio-economic Problem Story**
- B) The Classical Solution to such Problem**
- C) The Inspiring Socio-Economic Solution**
  - 1) Understanding the Problem Vectors
  - 2) The Solution Proposed
  - 3) Outcome of Problem Solution

*Social life found to affect our economic outcomes that it needs to be carefully built in the story. This would help to the focused efforts of re-inventing our lives through re-inventing the way we deal with the concerned problem stakeholders.*

*The reason why most of the governments and those entities that influence communities, throughout history, use most of the time the first type of problem-solving, i.e. bring in solutions that are resources dependent and based upon (Supply vs. Demand) is that they are simply eager for showing power than deeply addressing the quality*

*of life needs.* Sometimes also it reflects the incompetence of the government to address chronic problems, or the capability to see the opportunities in the community problems.

*Ineffective addressing of socio-economic problems has been really the cause of many society corruptions that made the target of the decision makers focused on acquiring the power and capital wealth, at the expense of serious positive outcome-solutions.* Obviously, in a sensible world, the government should never undertake to solve community problems, unless it finds that they don't have the capacity to solve it themselves, as the more government solve the problems for the community the weaker would be the community capacity to solve their own serious problems. This might be especially destructive when governments use resources to solve a problem that they know it would come back again, in same or different form, after a few years.

*Leading governments found to sustain very high indicators of competitiveness and happiness of its citizens due to its capacity to solve problems and challenges through people engagement.* The Scandinavians government, for example, would establish a level of citizen-government engagement that can't be matched. If the problem is complex the Finnish government, for instance, would undertake a specific public initiative to solve it utilising the accessibility of the NGO's. The outcome of such initiatives is usually further empowerment and enrichment of the stakeholders.

*The reason why most of the governments throughout history bring in solutions that are resources dependent and based upon (Supply vs. Demand) is that they are simply eager for showing power than deeply addressing the quality of life needs.*

*Adjusting heuristic uses of the socio-economic problem can be based on the solution thinking strategies.* The backward problem thinking creates more focused problem-solving attempts that start from the

solution state then back towards the problem starting state. The problem means-ends analysis thinking help to break down the problem into sub-goals and work toward decreasing the distance to the outcome state by achieving the small goals. These are just examples of the styles of thinking that are going to be discussed in this handbook for the purpose to create problem solvers that are thinkers.

## **Socio-Economic Issues & “Problem Sensitivity”**

Socioeconomic status has powerful and complex impacts on any problem solution. For example, *understanding the status and health are essential for long-term improvements of population quality of life*. Therefore, when start diagnosing a socio-economic status in relation to a community health issue, for example, we might need first to understand the racial and ethnicity that links to the historical development and the way health is maintained.

Most of the diagnosis literature focus on relationships that link, or integrate between the different socioeconomic factors. For instance, there are sound socioeconomic resources that can increase with levels of influence on health outcomes, such as mitigation of risks of chronic diseases, mentioned in *Case (6)* in Appendix (2). However, in the most review of historical diagnosis detail, the relationships between problems related to such socio-economic issues found not be adequately examined or utilised. Therefore, *it believed that realising the diagnosis of the different socio-economic perspectives would help us assess the truth of “common sense.” These perspectives help the problem solver to be resilient with complex problems through assessing both their opportunities and constraints*. Socioeconomics perspectives are used for various inquiries to uncover the behavioural interactions through the ‘social capital’ and the formation of ‘social values’. Thus, having

socio-economic diagnosis while tackling a problem found to describe the reciprocal relationship between many disciplines and build multiple perspectives of the outcome constructs that come from: economic science, sociology, psychology and management, and this emphasize the multidisciplinary approaches.

*Literature still has a gap in addressing the details of the cognitive processes and the psychological interactions that occur during the operation of problem-solving related to complex socio-economic issues and the problem statement that follows that.*

*'Socioeconomic status' therefore is considered a combined measurement tool that takes into consideration, for example, the influence of family/community economic status and social position in relation to other factors as income, education and occupation. Such attributes are assessed as part of the necessary relations that needs to be built for the exploring the problems opportunities, be it clear or hidden one.*

These four diagnoses are Physical, Analytical, Forecasting and Model Piloting Diagnosis. For example, in *Case (15)* sample of students from the under-performing schools were interviewed to ensure that they are given varied attention based on their competency. This was the physical diagnosis. Then, comparative analysis with national schools and students' performance were done as part of the analytical diagnosis. Probability of risk factors were carried out to ensure that no poor performing students are missed from being given specific care even in an under-performing schools. Finally, field piloting diagnosis of how under-performing school can mitigate the risks of having any type of its students not meeting the minimal standard expected for their class or age is carried out. The field piloting would continue till a model is set-up for all types of under-performing school and it can be generalised. Table (1-1) shows the four examples of

diagnosis done for selected cases in Appendix (2) table (A-2-1). These four diagnoses are Physical, Analytical, Forecasting and Model Piloting Diagnosis.

Table (1-1) Illustration of different Diagnosis for different Socio-Economic Issue

<b>Type of Socio-Economic Issue</b>	<b>Physical Diagnosis</b>	<b>Analytical Diagnosis</b>	<b>Forecasting Diagnosis</b>	<b>Model Piloting Diagnosis</b>
Ensuring that all students in under-performing school meet the minimal standard.  <i>Case 15-Appendix (2)</i>	√	√		√
Enhancement of University R&D centre to deliver better profitable multi-disciplined projects  <i>Case 19-Appendix (2)</i>		√	√	√

Type of Socio-Economic Issue	Physical Diagnosis	Analytical Diagnosis	Forecasting Diagnosis	Model Piloting Diagnosis
Prepare the Horse Men (the jockeys) for early retirement where they can be trainers or experts or administrators  <i>Case 43-Appendix (43)</i>	√	√	√	√
Specifying the qualities of the water rather than treating with water without scientific claim or evidence  <i>Case 48-Appendix (2)</i>	√	√		

Those socio-economic problems that haven't completed forecasting diagnosis either would have been clearly solved with clear outcome by reaching the analytical diagnosis or the results of the model didn't show the outcome yet, or at the time of writing this handbook.

## Managing Probabilities of Socio-Economic Issues

*Most of the socio-economic issues are non-routine problems which can be solved in more than one way and may have more than one solution. History of managing probabilities in socio-economic problem-solving is one of the main reasons for the development of heuristics investigations. Once the problem is investigated it can be categorised as general or specific. This codification of the problem helps to identify the type of information and observation that need to be collected about it.*

*Managing probabilities of the socio-economic problem mean that we need to be particular in selecting and focusing the issues relevant to opportunities of the problem. This means we need to discuss the main options of the problem and then establish criteria for exploring the solutions.*

In order to manage a socio-economic problem, we need to see first its 'feasibility factors', then its 'benefits factors' and finally its 'acceptability factor'. These factors help us to capitalise on using the problem outcome towards creating better development and transformation. In the case of elimination of the influence of Gambling (pitting) behaviour amongst youth in Bosnia-Bihac, as listed in Case (42) of Appendix (2), the 'feasibility factor' was studied whether it can be built in a model of reference 'high-school' which is surrounded by gambling and pitting shops and stations. The 'benefits factor' was explained to the school principal, the teachers and the selected model students. The 'acceptability factor' focused on showing how the students influenced their peers and their families to avoid gambling and sustain the prevention practices, by resembling the better quality of life, i.e. more ability of focus, less relief of tension and anxiety, besides more cash flow.

*When we study socio-economic issues we are actually studying the way our lives are planned.*

In order to enhance the probability of a socio-economic issue the problem-solving journey need to be purposeful, reasoned and goal-directed towards a 'realised outcome'. An experienced problem solver would try to enhance the probabilities of the problem to develop the most suitable thinking needed for solving the problem. Managing probabilities help to formulate inferences, to calculate the likelihoods and make decisions in different critical steps of the problem.

*Managing probabilities of the problem help to bring better visualisation to the desired outcome which enhances the critical thinking throughout the process. Therefore, reflective thinking during a socio-economic problem can be part of managing its probabilities and prompting learning during its complex situations because it provides an opportunity to step back and think about how to actually solve the problem and set problem-solving strategies that can help for effectively achieving the visualised goal.*

When we are faced with complex problems, as the ones listed in Appendix (2) and throughout the cases in this Handbook; *managing these problems probabilities would help to be more aware of their potential learning contributions.* Therefore, managing the problem probabilities would help to choose its appropriate strategies and hence identify the ways it builds the knowledge towards its solution.

*In order to enhance the problem outcome of a socio-economic issue, we need to ensure first the problem scenarios and the storyboards related to them are properly visualised, as shown in Figure (1-2). Here the problem opportunities would be integrated with*



the data collected which could help to build even more focused outcomes.

Figure (1-2) Illustrate Enhancement of Problem Outcome through Opportunities Management



## Socio-Economic Problem Modelling

Each socio-economic problem solution can't be accepted and generalised unless it is tested through a model. After an effective diagnosis of the problem and exploring the opportunities it brings we can start building the socio-economic problem model.

*There are countless factors that influence any socio-economic problem modelling. For example, the model solution can be dependent on the environment it was initiated in. However, most problems models have uniform factors as the demographics of age, or time, or simplicity, or complexity and its behavioural influence. The modelling for the problem help to identify its characteristics and its influencing factors. Developing cognitive processes through problem modelling help to create focused attention which helps to collect focused observations and more accuracy in forming a mental picture for the solution called 'visualised outcome'. In the table (1-2) selected cases from Appendix (2) are presented to illustrate the problem modelling.*

Table (1-2) Illustrate Examples of Factors Influencing Problem Modelling

<b>Socio-Economic Issue</b>	<b>Environment</b>	<b>Demo-graphics</b>	<b>Level of Complexity</b>
Developing the impact of 'Woman Development' Programs  <i>Case 38-Appendix (2)</i>	Challenging, Gender Inequality, Post-War	Young Women are the majority	Moderate
Intergeneration Gap  <i>Case 53-Appendix (2)</i>	Unstable Socio-Economy & Speed of Life	Increase in Dependency Ratio + Decrease in fertility	High
Camel Wool Carpet Factory with a Social Capital & High Community Goodwill- Nouakchott- Mauritania  <i>Case 53-Appendix (2)</i>	Poverty with low productive economy + Competitive Industry	Elder Village Women are the most experts in Carpet stitching	Moderate

Thus *the solution modelling helps to address better structural behavioural feedback which is very important for complex*

*socio-economic issues.* Referring back to the issue of improving the bed management for the emergency patients, as discussed in different chapters in this handbook and mentioned as *Case (7)* in Appendix (2), the model done in the Medical Word help to create the major learning and establish better-visualised outcome for the project team. Actually, the model helps also the project team to collect more visualised observations for the other hospital departments before implementing the required change in relevance to enhancing the bed occupancy ratio.

*To utilise the factors that influence the problem outcome to come with “High” ‘multiplying effect’ model solution, the problem solver needs to build diversified socio-economic perspectives or issues and use only limited existing resources during the shaping of the model. To achieve a “High” multiplying effect one needs to start when the problem vectors are identified. The problem vectors then would bring out the potential capacity that can be expanded towards the targeted outcome.*

*With more realisation of socio-economic problems, we can improve the different decision-making that influences the way we see and utilise the demographic information around us.*

## **Power of Frustration in Socio-Economic Problems**

*Sometimes the proposed model solution would fail especially when the targeted community is frustrated with many socio-economic issues. This frustration helps to identify more opportunities that can be considered in the modifications of the model, or in building a new proposed solution.* Table (1-3) shows the type of frustrations from selected socio-economic problems that were presented in Table (1-2).

Table (1-3) Type of frustrations from selected Socio-economic problems.

Socio-Economic Issue	Sources of Frustration
Developing the impact of 'Woman Development' Programs Case 38-Appendix (2)	Too many training Programs that don't lead Gender Inequality and Effective Women Development.
Intergeneration Gap Case 53-Appendix (2)	Many Parents and Elderly Complaining from Generations Gap.
Camel Wool Carpet Factory with a Social Capital & High Community Goodwill- Nouakchott-Mauritania Case 53- Appendix (2)	Low-Profit Margin, Women Leaving their village and their families to work in the Factory, Very Low Wages, No Strategic Marketing, No Differentiation Strategy.

*Turning issues into opportunities require a mindset that optimises the frustration energy through close observations.* For example, due to the rising cost of water resources in Bahrain, as shown in *Case (2)* in Appendix (2) the water leakage project was initiated which saved the country millions found to be when the problem solvers understand the power of frustration, they would see life problems and challenges as stepping stones towards a bright future. Thus *management of frustration gives the problem solver the capacity to fill the gap needed to create proper solution values, visualise improved situations, inspire change and create meaningful assets.* Therefore, managing frustration would focus on how to address communities needs and improve life transitions with minimal vulnerabilities.

## **Cultural Diversity and Socio-Economic Problem-solving**

One of the most important socio-economic issues is going deep into the suitable language that would help to tackle the problem and diagnose it effectively. Language helps to develop thinking and understand how to think when solving cultural problems. Identifying the taxonomy of each socio-economic issue emphasises the working memory that enhances functionality in dealing with the problem. This functionality increases with the organisation of the information that might be collected in either structured or unstructured way.

*Organization of a problem diverse information relates to how well information can be retrieved and to what we can do with that information towards the targeted outcome.* With the availability of diverse thinking the problem solver not only expected to use it for improving his thinking approach towards the outcome, but even linking it towards reducing the fuzziness of the journey. Deciding on a diversified socio-economic issue, or solving part of its mysteries, or finding the opportunities it brings would help to build a resilient mindset. With collective (cultural) experiences we can get broader agreement on definitions of concepts. The different definitions of the diversified information can lead to very different outcomes in problem-solving and decision making, etc.

*Diversity thinking during problem solutions leads to constructive decision making during the issue investigation which selectively integrates the inferences that lead to a profound visualised outcome.* Given the diverse competing interpretations of a problem, we tend to adopt those interpretations that are in agreement with our schema. *Without diversity thinking the problem solver might use*

*narrow sets of experiences that can lead to judging others' behaviour from a biased perspective.*

*Socio-economic thinking, in general, usually requires specific efforts, such as controlled thinking, in order to manage existing biases that would lead to optimal outcomes. Controlled thinking is needed during problem-solving attempts in order to reach a resilient outcome. However, this thinking requires intentional effort especially in the analysis of existing biases. When the problem investigator applies 'diversified thinking' more optimal outcomes (better choices and decisions) are expected.*

*Much of what is thought to be a problematic behaviour in our socio-economies are actually a source of opportunities.*

## **Socio-economic Issues & Vectors Wealth**

*Reviewing any socio-economic problem regardless of its nature carries with it default solutions preference that comes from foreseen physical or materialistic wealth of opportunities called in this handbook 'vectors wealth'. In order to come up with an effective socio-economic solution, we need to understand the problem vectors, i.e. its anatomy and the type of opportunities it carries. Problem vectors carry not the only direction for the solution, but also quantified construct that carries more than one piece of information. However, studying the best socio-economic solution history shows that the best solution comes from non-financial vectors such as human capital, social and physical assets which help to retain a sustainable wealth of opportunities within each problem.*

*Socio-economic problem vectors open up a wealth of opportunities that help to improve the scale of solutions possible to be explored by the problem solver. Realising the problem vector lead to better problem accessibility and integration with the socio-economic status. As in Case (25) of*

Appendix (2), the integration through the redesign of the public buildings for schools, hospitals and social centres created more multi-purpose buildings owned by the community and enhanced the rate of occupancy and utilization in a small country as the Kingdom of Bahrain. Selecting the problem vectors of the low utilisation of the public facilities in certain communities while other communities complaining about the non-availability of these facilities, brought the opportunity of integrating of the facilities between different communities and different specialities. This can be reflected in the final stages of the outcome model thus differentiating the capacity and efficiency of the socio-economic solution based on the defined problem vector, as shown in Figure (1-3).

Figure (1-3) Represent the Role of Problem Vector in developing the Scale of Problem Solution



This means *we need to always assess the nature and magnitude of the socio-economic problem which entails listing all the “forces”, or the “wealth” within the problem that could help us to see, or visualise the*

*desired goals.* Listing all these intrinsic power based resources set the mindset towards sustainable goals. Exercise (3) in Appendix (3) help to identify the capacity of the socio-economic problem wealth. Table (1-4) list the type of forces or wealth within three selected socio-economic issues to support the reader to utilise problem vectors effectively.

Table (1-4) Type of Wealth or Forces Within the Socio-Economic Problem

Socio-Economic Problem	Wealth or Force of Problem
<p>Reduce the gap between citizens' demands and their quality of life needs in Housing services through improving the choices and provision of a variety of options in non-villa packages (i.e. flats).</p> <p><b>case 30-Appendix (2)</b></p>	<ul style="list-style-type: none"> <li>- Realised Quality of Life Gap for those citizens waiting for Housing Services.</li> <li>- A high percentage of young couples who need special services.</li> <li>- Citizens demands and choices of lifestyle are changing or can be changed to become more resilient and accepting other than villa options.</li> </ul>
<p>Reduction of courts and legal cases transferred due to family and marriage disagreements by solving it at first instance in the police station.</p> <p><b>case 32- Appendix (2)</b></p>	<ul style="list-style-type: none"> <li>- Provision of clear alternatives to the complexity of court and legal cases which cost money, time, anxiety and deteriorating relations.</li> <li>- The ability to utilise family relations mediation.</li> </ul>



Socio-Economic Problem	Wealth or Force of Problem
	<ul style="list-style-type: none"><li>- Ability to utilise Police Community expertise to bring counter-measures to family problems and thus reduction of divorce or what comes after a divorce.</li></ul>
Enhance young girls' involvement in Woman village activities to ensure the sustenance of knowledge transfer.  <b>case 36- Appendix (2)</b>	<ul style="list-style-type: none"><li>- Availability of abundant knowledge from elder village endogenous women that can be disseminated to youth.</li><li>- Availability of inequality conditions for girls in different countries where they can't join schools or get enough education.</li></ul>

It is advised that the reader try to fill Table (A-3-1) for evaluation of the different wealth of assets of the socio-economic problem under study.

*Any socio-economic issue needs to be decoded into comprehensible actions that can be achieved or narrowed as a social or economic discrepancy between an 'actual state of affairs' and their 'desired state of affairs'.*

## Perspectives of Socio-Economic Issues

There are many socio-economic perspectives in each problem that would lead to differentiated solutions. Some perspectives show how the problem can be a source for holding the society together as it helps to make a common issue of concern from issues as inequality, poverty, migration and taking care of ageing

or vulnerable people. This can be seen in many cases listed in Appendix (2). Other socio-economic problems which are found to create social conflicts; found to give more perspectives of seeing the socio-economic problem as a source of social interaction. For instance, the *Cases of the police (32)* in the list of Appendix (2), shows that managing to reduce cases of gold and jewellery theft from gold market shops, or enhancing social harmony between neighbours due to parking disputes or similar small issues, or reducing courts and legal cases transferred due to family and marriage disagreements by solving it at first instance in the police station all type of problems helps to properly define the type of social interaction needed for each situation. The solution for each type of these problems usually would bring long-term consensus on how situations can be defined based on unity and mutual interdependence along with shared values.

*Some perspectives bring in explicit opportunities that help to build abstractions to unique solutions.* For example, some perspectives help to create a framework for building a 'problem theory' that sees society as the product of the everyday interactions which need symbolic-interaction paradigm. *Cases (32)* of housing services would be a good example here. Other structural-functional perspectives help to establish a 'social problem' paradigm that focus on broad social structures as a basis for solving socio-economic issues in general. For example, *Case (1)* of Appendix (2) focused on re-inventing the education system so that we create a product of 'inspired students'. This was achieved through sets of 'problem theory' that targeted to change the type of interactions with the students. The challenge was to identify what is expected from them as a goal of life and then design the curriculums around that. The 'problem theory' helped to improve also the way classes are managed and ensure effective delivery. The final evaluation was totally transformed to what inspired the student, not what the student remembered. If we study in the meanwhile

the ten sub-cases of Case (3) related to 'Social Development' in Appendix (2), we would see that the problem of Geriatric Care, are highly related to their 'quality of life'. Actually, it set a high standard of the empowerment and the development for the elderly people to a level where they would continue to have the capacity to contribute towards national GDP of the country. This means we need to deal with such socio-economic transformation as a structural-functional problem where the social-structure specially would be re-invented, especially with the lengthening of human life cycle up to 87 years old, in average. Same structural-functional perspective solutions most probably would apply to the other cases of social development, i.e. cases of productive family sustainability, stronger family businesses tie, improvement of the quality of life of the Disabled People and their Production, 'Working from Home' Program, evaluating the Capability of 'Social Allowance Entitlement', enhancing of the products quality and competitiveness of the retirees and finally improving the quality of micro-start families with focus on women and people vulnerability.

*The more we explore a problem of socio-economic issues we are actually maximising the return of the knowledge that the problem contains.*

*The symbolic-interactionism perspective is another important source of micro orientation that brings in solutions to socio-economic problems.* This perspective focuses on patterns of social interaction during final identification of a socio-economic problem. This can be seen in in the four sub-cases of Case (10) of psychiatric services where the suicide would be a factor of miss-management of anxiety. In summary and as explained in Table (1-5), we can link that most of socio-economic problems/issues come from three perspectives: Functionality, Conflicts and Symbolic Interactions.

Table (1-5) Influence of Socio-Economic Perspectives

Perspective	View of Socio-Economic Issue
Functionalism	Study the challenges of the socio-economic solution that would maintain the cohesion of the whole system.
Conflict Theory	Study the socio-economic issues as a collection of constructs held together by a social network. Thus bring in solutions that emphasis the communication model that support this social network.
Symbolic Interaction	Study the socio-economic problem as a socially or economically constructed issue that is caused by different everyday encounters. Thus focus on studying the consistent encounters to discover the hidden opportunities within such a problem.

## Visualising the Socio-Economic Story

*Socio-economic issues visualisation provides the problem solver with the ability to see the experiences and difficulties as part of the solution not part of failures and obstacles. Through visualisation, we can see how to utilise 'social marginality' in problem-solving and exclude certain 'social activities' and manage the social patterns. This raises the capacity of the problem solver to view the society problems as an outsider without being affected by personal perspectives.*

Through visualisation of the problem, we can build proper social and historical relationships that influence the creation of a socio-economic story. Understanding the impact of visualisation on the attitudes and behaviours help to prioritise what socio-economic issues should be studied first.

*Visualisation helps us to identify the best formula to deal with most of the socio-economic problems.* For instance, most socio-economic problems have been approached by the formula of (Supply vs. Demand), with visualisation we can transfer to (Capacity vs. Demand). Without visualisation, all types of problems solutions are considered temporary ones, or only would be a cause for growth to delay the problem which usually would come back and occur again.

*All the socio-economic projects that are done without perspective(s) that lead to clear visualisation; the dynamics of the changing demands as the demographics of population number, age, gender, etc.; would have a potential of coming back, if no alternatives other than resource-based-expansions are proposed.* Solving socio-economic problems as demands of educational services, healthcare, social welfare, traffic, etc. as listed in Appendix (2) are just some of the examples of such projects that would develop a socio-economic issue due to increase in demand and they would need an innovative visualised solution in order not occur again.

However, *history shows us there are few socio-economic permanent solutions that are based on the formula of 'supply vs. demand' can have sustained outcome as reduction in diseases, or elimination of famine, or reduction of poverty, etc. but based on again practising visualisation that would change the mindset focus and in finding alternatives without being totally dependent on resources.* This would help the community again to identify new alternatives to 'supply vs. demand' that would be similar to innovative solutions that come from experts of 'capacity vs. demand' formula.

Most of the outstanding socio-economic solutions build communications that create bridges between communities, or agreements between parties, or would lead to cultural development plans. Almost all these solutions are dependent on visualising

a story that would transform practices towards the formula of raising or exploring the capacity vs. the demands from the problem environment. i.e. *Visualising the story of a better community help to bring better capacities within the communities' resources that give rise to unique solutions to any socio-economic challenge.* The structure and the functionality of a story framework help us to see the society as a complex system whose parts work together to promote solidarity and stability. Through stories, our lives are guided by relatively stable patterns of social behaviour. Each construct of the story proposed for a socio-economic problem solution has a social function, or can be part of a sequence of solution that would ensure the development of the society as a whole.

*Once a story is visualised for a socio-economic issue it would start to develop a solution that manifest 'social functions'. These social functions would establish specific recognized, or intended 'social patterns' which help to re-invent our communities lives and our life too.* For instance, visualising the story of getting out of the poverty for the Barbarian Farmers of an Amazigh Village in Morocco, as listed in *Case (41)* of Appendix (2) led to capitalising on the village families' intrinsic strengths. This village had unique opportunities that manifest the social function as part of its wealth where practices of sharing economy could play a role in attracting eco-tourism related services.

*Sometimes the story would ensure that the 'latent functions' addresses largely the unrecognized and unintended consequences and the social dysfunctions.* For example, building a 'youth independence program' that counter the poverty in the Amazigh Village in Morocco, again in *Case (41)* of Appendix (2); would help to raise the capacity of the Amazigh farmers for competitive packaging and distribution of their eco-friendly and handmade products which are a trend that many tourists prefer nowadays.

Such 'visualised stories' would help to identify the undesirable consequences of a 'social pattern' that should be eliminated and thus finding better problem solution. For instance, visualising the essential role that Radio and TV in the northern part of Bosnia could play helped to change the negativity in the 'social pattern' in that community, as listed in *Case (42)* of Appendix (2). The accountability of Unna Sana Canton Radio and TV helped to build more focused 'positive psychology' waves of programs and initiatives which managed to raise the aspiration of the society and built the youth trust on the future socio-economy of the country.

*To renew the human 'learning capacity' and to extract the best creative, or possible exploration in the socio-economic problem-solving journey, one needs to feel the sense of excitement the problem creates from the initial phase of contact.*

*This destination for the socioeconomic story starts with identifying the challenges of the future scene and selecting the specific area of the problem. The story would provide also opportunities for the managing psychologically the results seen in the problem. Once the story is set more opportunities would be discovered and more initiatives would be specified. To illustrate more, by identifying the challenges of the future scene for the case of horsemen their future conditions were improved. This help to reduce cases of horsemen that get out their job early without proper retirement plan. This made us see the opportunities in capitalising the horsemen competencies as trainers, or experts, or administrators. This also opened the opportunity to use them as investigators for causes of horses' injury which help to enhance the throughput of horse injury interventions and the quality of life of horse caring, as listed in *Case (43)* of Appendix (2).*

Visualising the story destination, also helped to create better synergy through being more involved with the problem and

the unrelated story themes or opportunities. This builds an empathetic emotional commitment to the problem solution. This is exactly what happened on *Cases of (41) till (43)*, listed in Appendix (2) and briefly discussed in the earlier paragraphs.

*Building a problem solutions story can come also from the different perspectives that are accumulated while trying to tackle the problem. Usually, the 'value stream mapping' process of the story, i.e. the most important values that are carried within the problem story; helps to excite the mindset to start acknowledging the depth of the problem and in creating more effective solutions.*

Building the story help to build efficiency in dealing with the different problem opportunities. This should help to postulate the rethinking through the unique mix of values which enhances the problem accessibility. *Each case study, starting from case one, presented at the end of each chapter, besides what is discussed of Appendix (2) cases throughout this handbook, presents a story that can be generalised due to the themes, practices and values it carries within it.*



## ***Problem-solving Lab- Case ONE***

### ***Improving Community Humanitarian NGOs Impact***

#### **A) Summary of the Socio-economic Problem Story**

In one side of beautiful Unna River in the small city of Bihac in Northern of Bosnia & Herzegovina, you'll find a small office where Mr. Ezet and his small team are setting for long hours every day to manage the distribution of cooked food and other materialistic support. Ezet and his team suffer, as many humanitarian NGOs management teams, from the rapid increase of people categorised to be in poverty or in need of such services. This is creating an ever-increasing demand on the limited resources of Merhamet. Merhamet is an NGO with semi-independent offices all over Bosnia and Herzegovina (B&H) and which Merhamet Bihac, covered in this case-study, is one of them.

The list of Ezet and his team grown from 300 to 600 families 'in needs' who are totally dependent on the daily cooked meals and those many on the waiting list. Merhamet need to optimise the beneficiaries of the services based on their needs and priority through an in-depth dialogue and observations. Most of humanitarian cases stay forever, i.e. until they die. 40% of the NGO beneficiaries are found to be of young age between the age 16 to 39 years old.

#### **B) The Classical Solution to such Problem**

As many of humanitarian NGO's, Ezet and his team would be stretching themselves for finding funds that would address the increasing demands to deliver more meals or service to those families in needs. The team would try to get also sponsorship from the government. Usually, such problem solution increases poverty in the same family as they become more independent on the support of the humanitarian services.

The problem solvers would start their solution by analysing the ways in which services are provided in relation to the NGO's vision and mission. Then solutions about diversifying the Merhamet services besides the two main meals and financial allowance would be process improved. i.e. Cooked meals for more than 300 people a day and non-cooked food for 80 families a week would be improved, while financial support and clothes (where possible), would be re-evaluated.

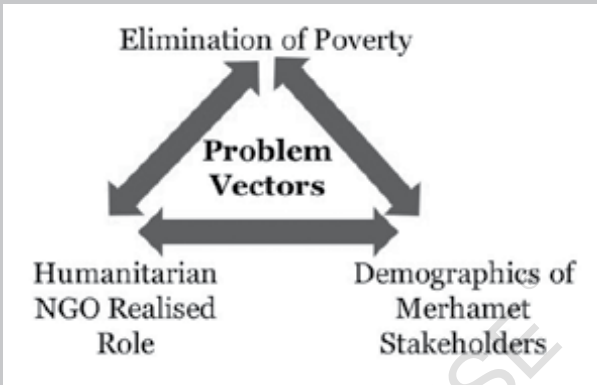
### **C) The Inspiring Socio-Economic Solution**

In order to come up with an effective socio-economic solution, we need to understand the problem vectors, i.e. its opportunities wealth that lead to the proposed solution and its expected outcome.

#### **1- Understanding the Problem Vectors**

The main problem vectors are about the elimination of poverty, the demographics and the role of the humanitarian NGO as shown in Figure (1-4). As per the story, the vectors carry opportunities that can be retrieved from the need to reduce the poverty in B&H through effective 'Poverty Elimination Programs' that would block unforeseen poverty enhancement, or poverty fertilization services. This means we need to understand how Merhamet as NGO is reducing poverty.

Figure (1-4) Problem Vectors of Merhamet Case Study



To put the problem in proper perspective, understanding the current Merhamet beneficiaries and whether they represent the city of Bihac poverty population is a very important problem vector. Besides, it is very important to understand whether the NGO has clear demographics of the beneficiaries and their different assets capacities.

To ensure that the problem is set in the right perspective we need to understand how to deal with the new social assessment standards for those inside the B&H. This means we need to review the ways social cases of families in need and poverty are categorised. A thorough review after carrying out random sampling shown that families need to be re-assessed again according to more precise criterions.

A table was established to help detect the priority weight matrix that would measure the special demographic needs of poverty cases. Poor families who received two services from the NGO were reviewed again. The reasons for providing cooked food for each family were re-evaluated again. Besides the different updated criteria for eligibility of the services; cases to those families and individuals in need were categorised as per their age eligibility and functionality. For example, from 60 - 75 years= green, i.e. most eligible for support. While 59 - 45 years= yellow, which means have a high probability to be either turned to be out of the waiting list if fit to be trained for self-sufficiency. The rest of ages of 44 – 30 years = red, 29 years and below too, which means that individuals should not receive help (or should receive temporary assistance).

In order to make each person live with dignity and be fully independent a specific amount was considered as per the following: For a single person = US \$35 and for a whole family of 4 = US \$150, per week.

## **2- The Solution Proposed**

The problem defined here is about re-considering the best way of dealing with poverty through humanitarian Non-Profit Organisation working in the condition of a country like Bosnia in Eastern Europe.

Problem vectors are shown in Figure (1-2) were applied to manage this complex socio-economic issue and more accurately use more qualitative and quantitative diagnosis of each vector and what opportunities it carries within.

The first step towards an effective solution was to get youth, from the families 'in need' and cases supported by Merhamet, to get involved in the management of the NGO services. Then a plan was set to building a network that ensures the interaction between those youths and the youths from the donating families. The plan helped to develop a team in Merhamet that helped the efforts in eliminating poverty among the beneficiaries.

The Merhamet team managed to gradually remove the waiting list of those applicants that of 'lower priority' for support while improving the knowledge in those codified as yellow cases, i.e. those 'in needs' but still can be semi-self-sufficient. The observation forms were set for collecting a fresh collection of the socio-economic status data of the families who receive more than one service (i.e. the upper threshold). Criterion such as: gender, marital status, age, ability & functionality, diseases, government support, support from other NGOs, family support, homelessness, financial situation, duration of support from the NGO, number of children/dependents, type of humanitarian services received, transport, were set for defining the weight for each family currently in the support program. The purpose was to define which families are in red and yellow codes that need to be prepared to be out of the list as they are competent enough to be independent and create in fact social and economic contribution.

The problem-solving experts reviewed the codified "green" cases, i.e. those of families proven to be in poverty, in order to reduce their number. The cases on the waiting list were re-examined and a selection for more families in need as per the weight was admitted to the beneficiaries approved list. Those not in priority for exiting, i.e. those coded as yellow or red cases, were registered for rehabilitation and productive family programs.

The Merhamet humanitarian services were re-engineered towards effectively attempting to minimise the impacts of poverty in the city of Bihac. The extent of the implementation of Bosnia's poverty reduction strategy was analysed to see if poverty really is reducing.

An outline was set for the type of services to be delivered alongside daily meals, depending on the type of functionality of the individual or the family in need. i.e. mentorship programmes for young people, care and cleaning for the elderly and the disabled, etc. A plan was designed so that families would go through a training program that would skill them to cook if they receive dry food, or fresh food. A special scheme program for the homeless led by youth teams was established to be a new scheme of Merhamet.

The response speed for those who apply for help was improved. Different university students and especially those of social studies college were deployed to re-study and frequently assess the NGO's cases every month, as part of an internship program. Plans were set to reduce the number of young people who receive meals from the NGO's service by 20% every year, as they have both the physical assets and functional capacity wealth that make them to contributors not receivers of humanitarian services. The target of Merhamet shifted gradually, over a period of six months, towards reducing the number of those on the waiting list, with higher priority given to those individuals who score less in their functionality. Since the waiting list carried lots of youth, entrepreneurial mentorship support services were enlisted as part of Merhamet new partnership strategy.

Discussion groups at Merhamet started a monthly meeting with youth volunteers. These groups started to implement the different suggestions that help to develop the process of applying, updating and accepting cases. Based on all this progress, the beneficiaries now could be frequently evaluated and assessed for the development and utilisation of their human capital, natural capital (land, property, etc.), physical capital, financial capital and social capital.

A stream mapping to improve “Throughputs and Outcomes” of each family status were started to see the input and the output conditions after training and mentoring services are delivered. The NGO established partnership programs for the development and recruitment of families in need.

The NGO worked also in developing more sustainable funding in terms of finding donors and sponsors, as well as costing the services and then marketing it: i.e. cost to feed a family per day or per year, cost for bakery, etc. The strategic team started to apply methods that help to consistently move the beneficiaries from being dependent to independent cases, i.e. Cases that don't qualify to Merhamet. This means that Merhamet strategic team would work more on building better ‘Capacity vs. Demand’ based on adjusting the input and output of cases, creating more independence in Merhamet business model. The project created more pull towards independent beneficiaries: i.e. those who receive their daily meal without support. Yet there is still a need for more checks to be done even for ‘green cases’, i.e. those families and individuals codified as being ‘in need’, so that they get qualified towards being more independent.

### **3- Outcome of Problem Solution**

By re-engineering the processes, the list of those 'in needs' in Merhamet has cleared and showed a clear categorisation for those beneficiaries in real need and those that could be moved to the less in need if they were qualified to be more independent. This helped to provide faster services without long waiting lists and made Merhamet ready for any crisis besides raised its capacity for the provision of more relief as a humanitarian agency.

One of the main outcomes of this problem-solving lab is that Merhamet is more confident that it provides services according to real needs. Besides, Merhamet managed to strengthen its presence in the community by building new focused partnerships that helped in accomplishing more effectively focused services. Getting Merhamet beneficiaries gradually coded as (red) and (yellow) which are consistently removed from the waiting list helped to create a model for eliminating the causes of poverty. A development, management and operational teams were established to collaborate together to ensure that these practices are sustained.

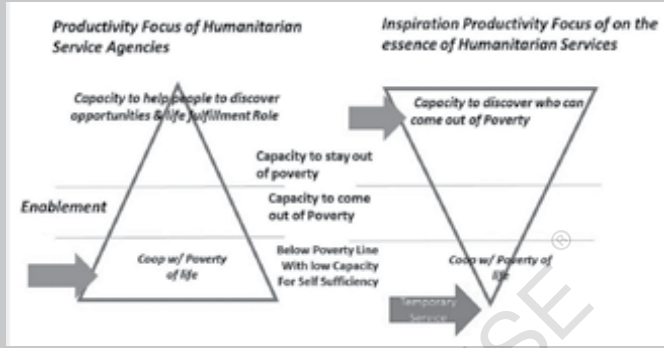
A matrix using the weightage table was set to move the conditions and fitness of those in support services from being only 'estimated' to being 'forecasted' in order to measure those really 'in need' and distinguish them from those who should be outside the list. A partnership program based on a win-win scenario was established. The Social services' university students and faculty agreed to provide and manage periodically a planned social study for the beneficiaries' cases, as well as providing youth volunteers with the needed evaluation skills.



One of the other main outcome of the problem-solving lab is that the Merhamet strategic team shifted its focus on improving the livelihoods of its beneficiaries by assessing them in terms of their socio-economic conditions: i.e. through focusing on the different assets and competencies available within each family and thus qualifying most of them to be more productive family. A collaboration plan was set by the Social Development Ministry in the government to improve the situations of those beneficiaries who are unemployed, without household and people who are affected by war.

Finally, a total reform in the business model of the humanitarian agency made Merhamet to become a healthier organisation and more profitable by starting a bakery. This mindset of starting an efficient cost centre for supplying fresh daily bread with the meals helped to cut cost by 20% since bread makes up 30% of the meal. The bakery targets now to become a profit centre, as would be the case of the new Merhamet building spaces which could be rented out for events. Merhamet strategic team initiated also trusts funds, that focus on helping the NGO to expand its role as a social transformation agency that targets to eliminate poverty in Bihac and be a model for B&H and Eastern Europe. Figure (1-5) shows the transformation plan that made Merhamet a model NGO with a focus on 'getting people out of poverty', instead 'helping people who are in poverty only'.

Figure (1-5) Illustration of the Transformation happened in Merhamet to Shift Towards an NGO that compact Poverty



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## CH 2 – DISSECT

### *The Anatomy of Problem-solving*

g u t t e r

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## Socio-Economic Problem Anatomy & Re-Inventing Our Lives

*It is very hard to change anything in life without understanding its structure and its anatomy. Targeting the anatomy of a socio-economic problem help in differentiating the level of understanding of the function of the problem outcome and how its structure can be observed, categorised and then diagnosed.* Without understanding the problem anatomy, we can't realise the story it carries within it. If the case is a complex socio-economic problem, we need to have close analytical views similar to what is done when dissecting the anatomy of that problem. *The idea of dissecting the socio-economic problem is to study the most effective ways and approaches that would create the greatest outcome efficiently.* Understanding the story of a socio-economic problem build its value-streamed solution or what we call 'outcome'. The clarity of this 'outcome' would help us to create a differentiated change in our lives, besides the lives of our communities.

The anatomy of any socio-economic problem is made of two main parts: social problem and economic problem. These two part are inter-related, i.e. they are dependent on each other, i.e. one influence the other. For example, having social problems like poverty, illiteracy, corruption, unemployment would lead or be related somehow to economic problems later. Same thing when we have energy crisis, inflations, over-population and/ or unequal income distribution it would be related to social problems later. *Once we establish the detailed relationship between the 'social problem' and it 'economic factors' of the socio-economic issue this would mean that we have started to 'dissect' the problem anatomy.* Dissecting a problem would help to search and see new approaches to interpreting and experiencing its insights.

*In certain socio-economic situations, a socio-economic problem is regarded as an unwelcomed, or a harmful condition that needs to*

be dealt with, or managed effectively; dissecting it effectively would ensure its proper elimination in the most efficient and effective way. A problem might be due to instability in certain results, or unsustainability of the expected ones, as the issue of the instability in the rates of unemployment in a country.

*In certain high achieving cultures, the socio-economic problems start when opportunities are missed, or the resources are limited, or not effectively being utilised. Other culture would see their socio-economic problems start when their community has a low capacity in pursuing innovation, or has been losing initiatives. In certain communities' socio-economic problems found to exist due to the unaligned, or the unattained development, or growth strategies. In many leading countries, a definition of a problem could be heard when searching for breakthroughs and creating legacy or recording performance. Table (2-1) represent all the type of communities issues that shape the socio-economic problems anatomy.*

Table (2-1) Type of Communities Issues Shaping the Socio-Economic Problems Anatomy

<b>Community Issue</b>	<b>Example of Socio-Economic Problem</b>
Opportunities are missed	Lack of basic needs in creating safe food Case (8) – in Appendix (2)
Resources are limited	Stretching of Police Forces to cover the fast demographic development Case (32) – in Appendix (2)
Resources are not effectively utilised	Lack of effective utilisation of patient beds Case (7) – in Appendix (2)
Low Innovation Capacity	Reduce sanitary system blockages that cause diseases and reduce the quality of life. Case (28) – in Appendix (2)

Loss of Initiatives	Closing the gap and accelerating the transformation towards 'Women Development' instead of 'Women Empowerment' after 5 years from the Women National Plan Kick-off. Case (17) – in Appendix (2)
Unaligned, or unattained development or growth strategies	Re-establishing the National University (Research and Development) outcome that would help to deliver better profitable multi-disciplined projects and also inspire effective project closure. Re-alignment of and integration between contracted projects and published papers is achieved. Case (19) – in Appendix (2)
Searching for Breakthroughs & Legacy Creation, or Creating better Record performance	Specifying the qualities of water in the 'Water Treatment Spa' in the specific region of Bosnia rather than treating with water without scientific claim or evidence. This breakthrough niche helped to establish better results in the patients 'length of stay' and enhancing the marketing strategy about the nature of water uniqueness compared to popular Spa competitors in the other countries. Case (47) – in Appendix (2)

*To assess the causes and benefits of a well-being problem, as one of the important socio-economic issues, we need to understand what prevents the community from deteriorating.*

Hence, *without the anatomy of the problem, it may not be clear exactly what the problem is. Thus we need to take care in defining the problem to see the influences of the solutions that it can bring to the community.* To reach a creative problem-solving solution one may

sort out the symptoms of the problem from the problem itself. Therefore, it is important to identify the underlying problem in order to generate the right solutions. This can be seen in the case of Merhamet, for example. The symptoms of Merhamet, in *Case (35)* in Appendix (2), similar to many humanitarian NGO's cases is the limitation of resources that made many of the people in need to be in the waiting list. However, in reality, the core of the problem in Merhamet case was the 'unavailability of the effective

Definition of the role of as a humanitarian NGO. This NGO was supposed to be working as 'a temporary service provider for those in poverty', but most of all as a catalyst that move people from poverty line to low-middle class gradually.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

## **Dissecting the Problem by its Definition**

*We can dissect any socio-economic problem by understanding its definition. Mainly a socio-economic problem comes from 'unsatisfactory situation', or a 'targeted improvement', or 'transformations that have difficulties', or 'a challenge'. In certain situations, a problem is perceived as the 'measured gap between existing and desired state', or the 'ambition of a move from the status quo'. Sometimes the problem is seen as the 'calibration', or the 'restoration from a deviation', or a 'move towards expected or targeted outcome'. Most of the problems listed in Appendix (2) would fit any of one or more of these quoted categories.*

Hays (1980) seen that a problem can be defined as wherever there is a gap between where we are now and where we want to be



while we don't know how to cross that gap. Therefore, Wheatley (1984) seen problem-solving as what we do when we don't know what to do. *In specific socio-economic situations, a problem can be defined as the 'intention to have alternative solutions', or 'exploring or discovering more opportunities', as mentioned in Buheji (2016).* Hence, one concludes that the anatomy of the problem occurs when there is 'a need for transformation towards a better community competitiveness', or 'better quality of an outcome', or 'better availability', or 'better efficiency' of a target. For example, one of the main challenges for humanity until today is illiteracy. Illiteracy is caused by the low capacity of the country, or the government utilisation of resources, or the finding of the alternatives. A socio-economic problem solver should rarely claim the difficulty of the problem, due to the lack of resources, or the high cost of learning, or due to increase of demand due for i.e. to growth in population, or justify child labour due to poverty. All these can be solved by the communities with minimal resources, if the problem is dissected properly.

*During the quest for problem dissecting and then problem solutions the search for its causality would help to explore its alternatives and this would lead to the development of the 'problem value creation'.* Therefore, a problem can be seen as a situation in which there is a goal, but it is 'not clear how to reach that goal'. A well-defined dissected socio-economic problem should have defined specifications that have a clear statement of where the problem is, the goal state of the problem, i.e. where you want the processes of the problem to reach. However, a good problem specification should avoid referring to non-sustained resources. Therefore, *there is an 'ill-defined problem' which are a type of problems that lack clear specifications of the start state, the goal state, or the processes for reaching the goal state.* Just an example of 'ill-defined problem' is high illiteracy among Amazigh and villagers' women in Morocco and similar developing African

countries when we dissect it as a problem of culture and tradition of the tribe, or the religion; *Case (43)*. However, if one really goes deeper, these causalities would vanish if we evaluate the paradigms influencing the decisions for sustaining women illiteracy.

However, *it is important to note that our past experience with problem-solving can lead us to mental fixation if we continue to use previously successful solutions, or solutions strategies without considering the differentiated conditions of each problem.* This could create an inability to interpret the problems effectively. Also, the functional fixation of the problem leads to more inability to realise which object that can function other than its typical activities. *Functional fixation limits our ability to solve problems that require using an object in a novel way. To combat functional problem fixedness, you should systematically think about the possible novel uses of all the various objects in the problem environment.*

*The more we explore a problem of socio-economic issues we are actually maximising the return of the knowledge that each problem contains. This exercise would help to raise the cognitive insights that can be formed within the problem.*

*The socio-economic problem solver would usually go deep in dissecting the issue under investigation so that to come up with solutions that are innovative, rather than learning the answers, or implementing standard procedures.* This should help identify solutions that have value, or that somehow improve our ability to manage our opportunities. This requires understanding the problem-solving process that starts with information gathering, or understanding. This should help generate possible solutions using various tools.

## Segmenting Ingredients of Problem-solving

Problem-solving like any other techniques depends on specific pre-requests in order to be fully utilised. Observing a problem properly would help us to understand specifically what type of pre-requisite is needed to fully diagnose the problem and exploit its opportunities. Therefore, once we have our first intervention with a socio-economic issue we need to observe with the intention to reach a clearer visualisation to a desired outcome. This is the most important ingredient that would help the problem solver mindset be ready to design a positive outcome instead of being busy with the problem symptoms. This means that the problem solver would be persistent on looking for how to reinvent the socio-economic situation in front of him/her.

*During the process of exploring the pre-requisite of the problem the mindset of the problem solver would start to envision the solution outcome through setting plans on how overcome any obstacles that the current problem is causing. Once the obstacles are being identified, the next steps would help to manifest change. Once the problem solver takes actions to generate possible solutions through optimising his/her mindfulness the possible solutions would be visualised.*

Since any socioeconomic problem is considered as a problem or a challenge that would profoundly impact a community reputation and/or its productive outcome, its segmentation is very important. Usually socioeconomic problems, if not segmented become more complex since they need to be studied from different disciplines and perspectives.

*By problem segmentation we start to understand the anatomy of a socio-economic problem and would start to see the opportunities missed. With proper problem segmentation we identify the resources to be utilised, or how we optimise the return on the investment. Take the*

issue of poverty, for instance, which we listed in *Cases (35), (41) and (45)* and are discussed in different places in this handbook. Poverty is one of the major socioeconomic problems and it needs to be properly segmented, codified and then classified for its causalities or missed opportunities. Only through this effective segmentation we could manage to overcome the complexity of poverty which is an issue that is causing humans to be continually deprived from their basic necessities and blocked from enjoying their minimum quality of life. Therefore, the role of the problem solver in this case is to segregate first the problem and deal with it as a macro-problem that influences other micro-problems. Then, we need to codify the different types of poverty and test how to mitigate their risks on other issues. The experienced problem solver would try to see what are the lost opportunities that a poverty situation might bring and then would target to optimise these opportunities.

*By synthesizing what is learned from the problem and linking it to a visualised story, 'behavioural mapping' of the socio-economic problem could be done. Based on 'behavioural mapping' of how the problem stakeholders would react or integrate with the socio-economic issue a plot of the 'spectrum of the problem solution' could be proposed. To illustrate more, by segmentation of those who live on the edge of the economic stability, as some of the cases in Appendix (2), we could find one side of the 'socio-economic spectrum' that could give the beneficiaries the cushion and increase the ability to build up entrepreneurial projects. This can be seen again in *Cases (17), (18), (25), (38) and (45)*, in Appendix (2).*

## **The Realisation of Socio-Economic Problem**

*Problem solvers can go down the wrong path with possible solutions if they do not understand the true problem. Thus one of the most important characteristics of problem solvers is properly stating*

the problem. Otherwise we might get possible solutions that only treat the symptoms of the problem, and not the real problem itself. Therefore, *problem solvers usually would look for questions or matters involving doubt, uncertainty, or difficulty and/or a question for solution or discussion.*

*There are steps that problem solvers follows in clearly defining a socio-economic problem such as determining where the problem originated, what are the 'present state' and the 'desired state'. Stating and restating the problem and then analysing the problem itself makes. For example, corruption is a socio-economic problem that originated from low pay wages, low job opportunities, lack of unity in public and lack of development. In order to establish the depth of corruption as a problem we need to see sources of its origination do any of them exist now and how can the problem be re-stated due to their existence. Same thing would apply to some cases that threaten security, like Case (32) sub-case (11) in Appendix (2) of the economic crimes. Hence, a realisation of the problem would state that the community has corruption problem due to low pay wages, without necessarily being committed to have a solution that would raise the pay of the wages.*

After defining the problem, the problem solvers would generate alternatives, then they would go into evaluating and selecting these alternatives before implementing the solution. *Usually the problem solver would focus first, through the 'reverse thinking' on the 'undesirable present', i.e. state the 'desired goal(s)'. Thus using the anatomy of the problem, the problem solver would study first the obstacles against reaching the 'desired goal' and how they can be managed, or eliminated, or even avoided in the future. If we take the example of the socio-economic problem of 'unemployment', Cases of (21), in Appendix (2), its undesirable present might be one of more of the following: the causes of unemployment, the slow economic growth, the increase in population, the fast development*

of new technology, the unsuitability of the specialties available, the mismatch with the educational level required, the increase of graduates beyond the market demand, the low entrepreneurship programs, etc.

*Expert problem solvers would usually focus on the solution, not on the problem. This is justifiable since if they focus on the problem, they will actually block their ability to come up with solutions. Focusing on the solution would divert their emotions towards the opportunities in the problem, i.e. the potential solutions.*

Acknowledging the problem anatomy shift our focus towards identifying the opportunities within it. Hence, the problem solver would not focus on 'what needs to be solved', or 'what needs to be fixed', but would focus on 'what need to explored'. Therefore, the problem solver won't also care about 'what went wrong', but what are the opportunities that came 'when things gone wrong'.

*Once the socio-economic problems are defined, the current (actual) socio-economic state of the problem need to be precisely assessed. Then the desired (ideal) state of a socio-economic problem outcome would need to be set towards reinventing the total community life again.*

The problem solver would see all possible opportunities in the solutions, even if they seem not important. *Since the problem solver would take care of the opportunities seen during the exploration journey. This requires changing the 'direction' of thinking continuously. This means we can use questions as 'what if..' and 'imagine if..' which open up our brains to get inspired towards exploring more opportunities.*

Therefore, one conclude that the main characteristics of problem solvers would be curiosity about their world, perseverance in dealing with complex challenges and restatement of the problem once they realise its potentials. The problem solvers would use

observations to formulate their own visualisation which in turn helps in developing their perseverance again. All the five exercises in Appendix (3) would help the reader to achieve this status.

## **Communicating Socio-Economic Problems Solutions**

Experiencing community problems can arise as a result of specific failure and the majority of failures would involve the communication model within the community or the problem stakeholders. *Addressing the expected requirements through a problem-solving team help to reduce errors in communication or delivery. Some problems may be the result of group errors, such as ineffective communication towards dealing with policy, procedures, or processes.* Therefore, through facing complex socio-economic problems in group we can makes a differentiated outcome.

The challenge of working with others to solve problems comes from trying to get quick results while involving others in a meaningful way. Involving others help to bring solutions that define the gap between the current and desired state thus identifying an effective outcome.

*Most of the complex community-related issues are initiated by understanding 'patterns of problem structure' represented by its 'activity profile'.*

*The problem solvers could communicate their exploration through a variety of solution paths. These communication paths can be through sharing reflections after collecting observations, codifications of the problem, gamifications mechanisms and other challenges that can raise curiosity. This curiosity should help problem solvers and their communities to develop strategies that can be applied through*

*different collaborations.* For example, when encountered with cases of 'unequal income distribution' among the cities and rural citizens among the explored population, the problem solver would communicate the potentials of 'hidden discrimination' that lead to the gap between the rich and the poor. This communication helps to retrieve more information about the socio-economic status and way of living that lead to 'high illiteracy among women' in the villages. This technique was used in creating different model solutions, like the *Case (36)* in Appendix (2).

Therefore, one could conclude that *part of the benefit of understanding the anatomy of the problem and dissecting it, is proposing problem communication that could be used as a tool for mitigating the problem.* This can be seen clearly in *Case (45)* where migration of youth was mitigated through effective communication between those who migrated, going to migrate, planning to migrate, those who came back home after migrating for few years and those who chosen to explore the opportunities in their communities as change agents and entrepreneurs.

## **Problem Sources and Stakeholders**

*There are many sources for socio-economic problems as the challenges in dealing with 'outcome unpredictability', or 'community negligence', or specific 'consumer demands' that bring in 'health and safety risks', or 'threat to survival', or 'socio-economic deterioration', or 'threat to quality of life', etc.* Each of these sources has their own direct and indirect stakeholders. For example, the causes of a country energy crisis go beyond the normal stakeholders of energy decision makers and the energy consumers. The energy crisis would include even indirect stakeholders as those involved in energy services, energy equipment maintenance, energy



third party suppliers and those cause energy overpopulation, as negligent consumers, as mentioned in *Cases (4)*.

Usually the socio-economic problem stakeholders are directly or indirectly affected by the depth of the problem influence. The stakeholders are part of the problem and should be part of the solution till it goes away. For instance, the stakeholders of Merhamet the humanitarian services NGO in *Case (35)* of Appendix (2), was the different ages of each family 'in need' amongst the beneficiaries. Those same stakeholders were part of the solution created that lead to have some of them go out of the approved list of the beneficiaries, however to get different services of support as rehabilitation and empowerment to be self-dependent and made others on the waiting-list to be more qualified to get temporary food and shelter services. would ensure that the extent of the problem doesn't increase. Therefore, the stakeholders usually would have a vital role in shaping the history of the socio-economic problem and its possible solutions, beside they would be the most concerned about its satisfactory solutions. In certain socio-economic issues, as 'inflation', the stakeholders can play a vital role in reducing the problem by simply boycotting certain products to reduce the negative impacts on the growth of money or the rising imports or overproduction. Same would apply for stakeholders of issues of unemployment, quality of life, elderly care, etc.

Usually the problem stakeholders would look for ideal practical solutions and in a moral, ethical and legal way. Therefore, such stakeholders would look for logistically feasible and economical approaches. For instance, stakeholders of inferences in police centres, as in *Case (32)* sub-case (21), in Appendix (2) would help to manage the protocols of the registered complaints and ensure justice is achieved effectively. While, the stakeholders for early

retirement, as in *Case (24)* sub-case (3) would be concerned for both moral and productive solutions.

*Ineffective addressing of socio-economic problems has been really the cause of many society corruptions that made the target of the decision makers focused on acquiring the power and capital wealth at the expense of serious positive outcome-solutions.*

## **Philosophy of Socio-Economic Problem Constructs**

*Socio-economic problems have many hinders, or obstructs that influence its effective outcomes. Each problem has constructs that influence its vector and its results, thus shaping its differentiated story.* There are many innovative methods that eliminate the complexity of socio-economic problems and which start with the problem measurement of the problem constructs and then the focus on the outcome of these constructs on the final development. These innovative methods and problem constructs integrate to create its philosophy. To illustrate more, the philosophy of a socio-economic problems that are caused by overpopulation might lead to focusing on its constructs as immigration and migration *Cases (32) and (45)* led to influence on education *Case (1)* and social development services *Case (3)*, or even to poverty *Case (35) and (36)*.

*Distinguished nations and societies tend to develop socially, culturally and economically clear coherent indicators that help to study the influence of certain socio-economic constructs.* There are, for example, many evidences that certain problems of mismanagement, or low performance, or instability that not only lead to economical loss, but even physical and psychological impact on the community. For example, Canada problem in healthcare services congestion

have many constructs that could be understood by the philosophy of the services offered.

There are, for example, today, many reasons for anxiety that are man-made and where stress comes due road designs, wrong work policies, human mindset, misunderstanding of the nature of the job, etc, like the *Case (6)* in sub-case (4) and *Case (10)* in sub-cases (1 & 2), in Appendix (2). Therefore, in order to solve such socio-economic problems, we need to understand it, not only to try to solve it, but to be more accurate in handling it from the most effective perspective that would increase its 'hit rate' and thus cultivating its overall outcome.

As discussed in Chapter One, the philosophy of socio-economic problem constructs depends as per its name on two main gears (social and economic gears) that push the capacity of problem solver to go up to the micro-gears of the problem. *Getting involved with 'social constructs' as taking issues that would improve or develop the quality of life, or trigger more community development, or lead to better equality or family stability would open more opportunities for organisational, or community strategic development.* For instance, the emergency patient beds *Case (7)* helped not only to greater saving for the general hospital, but helped to increased trust amongst the medical and healthcare professionals and reduce stress on all concerned stakeholders including the patients and their families.

*Once a problem 'activity profile' are identified, focused problem patterns would be exploited as 'hidden opportunities' in the socio-economic issue. Then 'problem vectors' would help to analyse the 'problem factors' and its trends thus building different possibilities for 'socioeconomic constructs'.*

Therefore, *the mechanism of any of socio-economic issue 'social constructs' would influence the management of the resources and thus in the differentiation of outcome competitiveness and the*

*cost- effectiveness of the project.* Even these social constructs affect the lifestyle. Thus as shown in Figure (2-1) both the main gear (the social constructs gear) plus the intermediate gear (the economic constructs gear) might be a source for better educational, technological, ethical, legal and political outcomes. These micro gears carry within them practices for better lifelong learning, research and development along with public involvement. Having a mindset that appreciate the great influence of social opportunities inside each socio-economic problem is what differentiate its outcome.

Figure (2-1) Socio-Economic Problem Constructs



*The philosophy of analysing the problems helps to empower the problem solvers to interact and learn the different problems trends and indicators in the society and to keep them in pace with their development.* In order to exploit effectively the best opportunities, we need to analyse the socio-economic problem under focus

in order to come up with proper reasoning. This is especially applicable when the community undergoes new reflections and interpretations of its previous concepts, or shift towards new trends or targets transformation towards specific goals as the United Nations Millennium and Sustainable Development Goals (MDGs and SDGs). For example, the lack of services and facilities of tourism in countries which have poverty yet have virgin natural assets for socio-economic philosophy construct. Once these services are established with minimal resources it causes further economic developments.

## Methods of Problem-solving

There are many methods of problem-solving, however here we focus methods that would help to explore the entire 'problem space' anatomy and/or should help to reach a 'better socio-economic state'.

However, from experience of cases listed in Appendix (2), there are other more popular methods in dealing with socio-economic issues, such as dealing 'backward' with the problem. In such situations the problem solver would start dissecting the problem by starting with the goal related to the problem and then work his way back towards the beginning of the problem. This method would help to explore the 'problem space' and also discover the 'socio-economic status' in an innovative way. These methods would help to think backward on how to improve the community quality of life, for example, through improving Merhamet services which are mentioned in *Case (35)* in Appendix (2).

*Managing probabilities of the socio-economic problem mean that we need to be particular in selecting and focusing the issues relevant to opportunities of the problem. This means we need to discuss the main options of the problem and then establish criteria for exploring the solutions.*

The Socio-Economic methodology for exploring solutions could be carried in five stages through four journeys. The first stage would be focused on determining the symptoms and specifications of the problem in order to start the Diagnosis Journey. Here, *instead of focusing on discovering the root cause of the problem, the socio-economic problem solver would explore the opportunities for the solution, or the outcome that the problem could bring.* Once the opportunities are identified the Solution Journey can be initiated. Here many choices and alternatives would pop-up for the problem solver. Thus proposing an outcome based story lines and working to fill its gap would be the priority of the journey.

In order to finalise the socio-economic outcome, or the model of the outcome, the Decision Making Journey would start to ensure the sustainability and the fitness of the outcome. Through Management of Change Program, the problem solver can publish and generalise the socio-economic model once the effectiveness of the outcome stayed three years or more. Figure (2-2) illustrates method for exploring solution.

Figure (2-2) Methodology for Exploring Solutions



It would be appreciated here if the reader goes through the case studies mentioned at the end of each chapter and the

socio-economic models listed in Appendix (2) and practice how Figure (2-2) could be applied.

## **The Dynamic Balance of Problem-solving**

*Problem-solving is a dynamic balance between problems solving and opportunities that leads to discovering its solutions. Through problem-solving we can generate options for development.* The mind that manage to have a dynamic balance during problems statements can see more opportunities and identify more promising ideas, i.e. more insights. This dynamic balance helps in putting our ideas into action. For instance, in *Case (38)* in Appendix (2) of the Women Entrepreneurship Development NGO's in Bosnia the delivery of German Language teaching classes helped to create imbalance to other socio-economic issue that are to increase the migration of Bosnian women to Germany. Therefore, in order to bring better dynamic balance, the women NGO's were aligned to give there courses based on women development needs and not wants.

*When dynamic balance is established in dealing with the socio-economic problem we can increase the capacity to create judgement and deal with failures. This balance would help us later to build better 'tolerance to ambiguity'.* This dynamic balance to the problem statement plays a role also in solving many complex issues that are tackled in the 'problem-solving labs' and mentioned in this Handbook.

## **Engineering of Problems and Challenges Process**

During problem-solving the following steps would be taken in order to ensure effective solutions: first '*questioning of assumptions*'

*which would help on the 'precise definition or redefinition of the problem'.* The following steps would be on ideas generation and cross-fertilisation of these ideas that come out of the problem. In case (1) relevant to the performance of the Ministry of Education, the ability of schools and educators to create graduates that have the capacity for the market dynamics was questioned. As a result, many ideas came out of this questioning where the ministry assume that the labour market is static and not dynamic.

*Managing probabilities of the problem help to bring better visualisation to the desired outcome which enhances the critical thinking throughout the process.*

The process of problem-solving could be designed as a challenge that is full of opportunities that can be explored and exploited. Once we start to see the opportunities in the constraints and challenges that the problem process brings, we will start to get excited. This excitement, as per the latest neuroscience research, plays a great role in the level of releasing the neuro-transmitters, specifically Serotonin and Oxytocin. These two neuro-transmitters help to intrinsically motivate the problem solver to deal with the complexity of the problem. In *Case (1)* in Appendix (2), the process of educating students that are not fit for meeting the turbulent dynamics of labour market, brought the opportunities for proposing a total re-engineering in the whole educational system. This proposed change helps to create a new socio-economic model in the educational system that would bring 'inspired students' that are willing to create jobs instead of being job seekers and/or would be persistent to reach their defined goals despite any challenges around.

As an example of engineering socio-economic issues is visualising a country to be blackspot-free from fatal traffic accidents. However, in order to engineer a socio-economic problem or a challenge



solution the problem solver needs to visualize the solution first. This visualisation would affect the problem solvers thinking and their psychology. Exploration questions would help to develop a deeper diagnosis, called 'differential diagnosis' as would be discussed later in detail. Figure (2-3) shows the five constructs of solution engineering. Thus, when we visualise that products of the education process in *Case (1)* are 'inspiring graduates', we would set the proper exploration queries that would create such product.

*Through engineering practices, we can explore the opportunities in the problem process and then exploit the opportunities between these processes. Managing the 'problem opportunities' would mean: 'Learning to observe' which would lead to 'Establishing solution plan'. Then once we 'Act on opportunities' we can 'Drive Change' and 'Enable Teams' to 'Reduce the obstacles in the process', such as lead time, in order to solve the problem in a unique and sustainable way. These engineering practices help to build proper visualisation.*

Figure (2-3) The Five Constructs of Solutions Engineering.



## Techniques to avoid Problems Roadblocks

*In order to improve the potential of problem-solving we need to increase our knowledge assets about the problem that would help overcome the roadblocks. Then, we need to have a plan on how to draw pieces of evidence and work backwards to solve the problem through these explored assets.* In order to avoid the roadblocks of problem-solving we need to manage the problem-solving challenges and risks, while tolerating its ambiguity. It is very important to allow mistakes while identifying obstacles.

*Effective problem-solving needs a well-structured problem with clear paths to solutions, while if the road has an ill-structured problem this means it doesn't have clear paths to solutions.* Table (2-2) represent the type of roadblocks expected for selected socio-economic problems and therefore the techniques that would be proposed.

Table (2-2) Illustrate Selected Examples for Management of Socio-Economic Problem Roadblocks

<b>Socio-Economic Issues</b>	<b>Problem Roadblocks</b>	<b>Techniques to avoid Roadblocks</b>
Socio-Economic Role of School Dormitory  <b>Case (37) Appendix (2)</b>	Giving chance to explore non-performing and troubled students in different ways	Agree in two weeks of exploration opportunities trial for students with the doubted capability
Improving Pre-School Influence Programs on Children of Homeless and Beggars' families  <b>Case (45), sub-case (11) Appendix (2)</b>	Children goes back to begging and same homeless practices after school.	Finding the opportunities for children unique skills that would help to overcome the pressures of their parents or reduce its influence on attending school.

## Dealing with the Anatomy of Socio-Economic Problems

The anatomy of problem-solving is about understanding the (What) and (Why) of a problem. When we understand what is the problem and why a situation occurs we can focus on understanding the problem inputs. This is especially important for socio-economic complex problems. Once the (what) and (why) are dissected and then explored the curiosity of the problem solver would be increased. This curiosity helps the problem solver to closely explore the opportunities of change and the opportunities we want to discover.

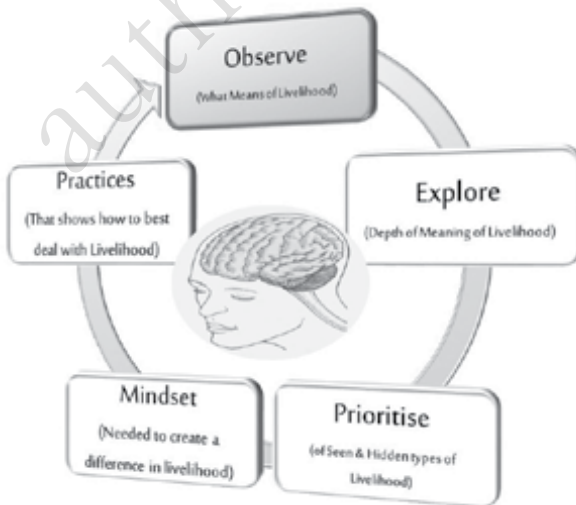
*A well-defined anatomy of any problem is easy when it comes to solving pure logic problems where clear solutions, procedures and logic can be used. i.e. similar to math or physics problems.* When we define a what and why of a problem we can get a great role in defining its outcome. Therefore, it is believed that knowing the anatomy of the problem defines its level of the solution.

Well defined problem anatomy starts with series of reflection. John Dewey (1938) confirms that reflections are about looking back over what have been observed or done. Extracting the net meanings from the problem help to develop the capital stock for the outcome. With clear problem anatomy which reflections are part of, we would have the capacity to look forward and look backwards till problem opportunities are clear. *The restatement of the problem helps us to anticipate, act, observe and organise ideas for future use.* This can be seen clearly, for instance, in reducing antibiotics use in the main referral hospital in *Case (7)* sub-case (3) and in *Case (38)* that focus on women development, where the essentials of using anti-biotic and what meant to develop women were re-established.

*In order to enhance the problem outcome of a socio-economic issue, we need to ensure first the problem scenarios and the storyboards related to them are properly visualised.*

Figure (2-4) shows how the problem anatomy start with observing what is the essence of the problem? Then exploring the depth of problem opportunities help to exploit and then prioritize the seen and hidden opportunities. This would help to reach a construct that is very important for problem management that is the mindset which the problem assumptions are built on. Due to the behavioural change expected as part of the problem anatomy, practices of models of opportunities can be easily created. Let us take for example the *Case (45)* in Appendix (2), where the bridges between academic Social Worker and Social Studies Schools and the realised community problems in Bihac in Bosnia, and where problem opportunities were illustrated through understanding the different socio-economic problems anatomy.

Figure (2-4) Define the Five Main Part of Problem Anatomy



When facing socio-economic problems and challenges, usually the rules for solving the problem are not clear and no one correct solution, but there are best alternatives. *Learning to solve socio-economic problems need informal educational settings which are missing in most of the educational systems.* This is why many people don't link socio-economic challenges to understanding the anatomy of problem-solving.

*Experience and history show that the anatomy of the socio-economic problem-solving has never been based on instructions or discussions only. All the realised problems that were solved and brought real development to humanity came from working on the field with "trial and error".* When we dissect each socio-economic problem we'll see that it has its constructs and codes that differentiate it from other problems. Thus each problem has its structure, specificity and complexity. Thus each problem engages a different cognitive process that needs different data collection and synthesis approach.

*Thus mental activities for each socio-economic problem should differ in its approach when it goes through the process of acquiring, retaining and using knowledge and it might extend even to the level when synthesis, inferences and conclusions are withdrawn.* The anatomy of the socio-economic problem can be visualised through the field explorations.

The field visit helps the problem solver to focus on acquiring information and knowledge about a particular problem through being able to imagine it. To illustrate more, without the field visit for Amazigh village, in *Case (41)* in Appendix (2) we would not be able to prioritise their way out of poverty. Thus the field has a major role in helping us to break the fear of "learning by doing", or "learning by trial", or "learning by experience".

Understanding the anatomy of the problem-solving help to go to the extent of trying extreme solutions, or look for hidden opportunities without fear of loss. This increases our visualisation and ability to link and integrate objects or events. Gradually we start to build more clear visualization about the problem anatomy which reduce the probability of errors and increases our 'hit rate'.

*There are countless factors that influence any socio-economic problem modelling. For example, the model solution can be dependent on the environment it was initiated in. However, most problems models have uniform factors as the demographics of age, or time, or simplicity, or complexity and its behavioural influence.*

## **Stating and Restating the Problem**

The problem statement and restatement techniques help to evolve the level of the problem absorption and realisation. During the first stages of tackling a problem, it is highly advised to first write its statement, no matter how vague it is.

The key to a good problem statement definition is to focus on dealing with the real problem or the problem origination; not its symptoms. For instance, in the different sub-cases of *Case (18)* of the Municipality Services, we find that re-stating the role of this public services entity from just 'a service provider' to an 'entity that is mainly responsible for building bridges' helped to see many hidden opportunities relevant to issues of 'lifelong learning' and 'quality of life' practices in the community. The restatement of role of the entity involved with the socio-economic issue has totally simplified what seem to be complex socio-economic issue in relevant to issues as cleanliness of the city, the recycling of waste and the reduction of waste generation from households. This clarity of the role of government entity helped

in enhancing the role of private companies and NGO's toward the 'Social Responsibility Programs' and speeding up different 'Municipalities Permits' while reducing need for pre-inspection.

The exercise of re-stating the role of entities related to specific socio-economic issue did not only save the community and governments Millions of Dollars, but it helps to improve the mindset of the community in the generation of opportunities while dealing with that socio-economic issue. The case of Municipality and management of waste, the restatement of the role of the entity, enhanced the organisation and its stakeholders' accountability toward their local environment and helped them to start a comprehensive model, for more environmental friendly community.

*Restating the problem means understanding its causes, such as looking at what, where and when it started. "What" questions help to identify the problem and its essence for existence. Then the "Where" questions help to locate or re-locate the problem. Then the "When" questions help discover the timing of the problem and management of the 'availability' part of it. These questions help to 'explore the magnitude of the problem' before restating it. Let us take the issue of water loss and its rising expenses in Bahrain as listed in Case (5) of Appendix (2) and 'explore the magnitude of the problem' in Table (2-3).*

Table (2-3) Illustration of the Magnitude of the Socio-Economic Problem 'Expensive and Scarce Water Loss'

<b>What is the Problem?</b>	<b>Where Does the Problem Occur?</b>	<b>When Does the Problem Occur?</b>
'Water Loss' due to different types of water leakages in the 'public water network'.	The differentiation of water loss occurs during:	1-Water leakages increase with more heavy consumptions.

What is the Problem?	Where Does the Problem Occur?	When Does the Problem Occur?
<p>The water loss is specifically detected from the 'water desalination station' to the 'consumers' household connection input points'. This huge water loss leads to high cost of water production which is usually subsidised by the government and later in the consumers. This water loss also is one of the main causality for water interruptions.</p>	<p>1-Water Meter Readings.                      2-Balancing of the Water Network.                      3-Many Water Leakages (visible &amp; non-visible).                      4-Water Leakages even in the new piping system and new areas.                      5-Water Leakages occurs even in newly maintained pipes in old town.</p>	<p>2-Water leakages increases in Summer.                      3-Water leakages occur when water pressure is high.                      4-Water loss is higher near old houses and in the narrow old town.</p>

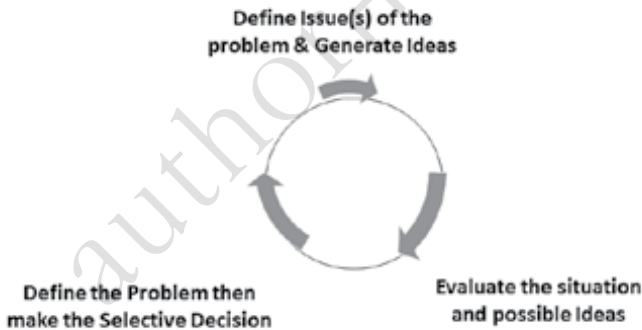
As a result of re-statement and defining the magnitude of the socio-economic water loss in the table above water pipes thickness and curves were re-invented and re-designed specifically to fit old town areas where pipes are thin and need to be curved. The proper curves helped to avoid the quick fatigue of the pipes that are caused by the narrow street. The other outcome of this re-statement of the problem exercise, water loss was reduced to more than 70%, this is a huge amount if we know that one-third of water produced used to be lost. Besides, no water to be taken from the natural wells any more. The water authority has now a unique knowledge-based system that helps to forecast and precisely predicts where the non-visible water leakages are happening or expected to happen. As a result of accumulated



knowledge the 'Predictive Maintenance Program' overall annual water network maintenance cost was reduced by 30% also the uptime for water continuity increased to be 95% in average for most of the country areas.

*Replacing specific words in the problem statement with a substitute needs a pre-requisite work that explicitly define the reframed problem.* This means we should try reverse thinking in rephrasing the problem statement. Or restarting the problem with positives instead of negatives. Figure (2-5) shows that once the problem issues are defined, its situation and possible ideas and opportunities can be precisely evaluated. Based on this, the problem can be re-defined.

Figure (2-5) Cycle of Stating and Defining the Problem



*Stating a socio-economic problem sometimes requires drawing the problem, or writing the problem as an equation. Writing an accurate problem statement can help accurately represent the problem through diagram, shapes or even formulas.* This helps clarify unclear problems. As the socio-economic problem statement becomes more refined; the types and effectiveness of 'potential solutions' can be improved. This exactly what happened with sub-case (21)

in *Case (32)* in Appendix (2) where the deterioration of trust of the community in relevant to making complaints in police centres became a socio-economic problem. The re-statement of the problem led to re-engineering the whole process of how police would listen, register and analyse the complaint. This helped not only to raise the efficiency of police personnel in gathering the inferences, but in linking the pieces of evidence in the citizens' complaints in the police centres. This helped to reduce court rejections, or the persecutor returning the cases due to insufficient evidences.

*The modelling for the problem help to identify its characteristics and its influencing factors.*

*A socio-economic problem statement would include specific details as addressing the 'scope of the problem' and then 'identifying boundaries of what can be reasonably solved'. Therefore, the problem statement has to be linked to the 'possible causes' and its 'potential solutions'. A detailed, clear and concise socio-economic problem statement will provide 'clear-cut goals' for 'focus' and 'direction for the possible solutions'. In order to practice the problem statement, it is highly recommended that the reader practice the different socio-economic problems mentioned in this handbook and particularly Table (A-2-1) in Appendix (2) through Exercise (5). Please explore more through enhancing your capacity to use Table (A-3-2).*

## **Identifying Mental Blocks**

*A mental block is any distraction that would keep the problem investigator from reaching a well-defined problem; where the problem would have clear goal state, clear initial state, clear sub-goals (problem can be broken down) and clear problem space. Identifying the mental blocks towards any problem help to improve or*

eliminate distractions towards an effective outcome. 'Emotional blocks' is the most important mental block that any problem solver should manage. *'Emotional blocks' can include anything from a 'fear of risk-taking' to a 'tendency to judge', or approach the problem with a 'negative attitude'.*

Distractions eliminates our 'ability to focus' on a socio-economic problem, and they usually come from dealing with different sources during the exploration stage. The more our mental blocks are managed during this stage, the more the problem solver would have the capacity to restructure the problem, and the more it would be possible to gain insights into the solutions possible. Therefore, too much, or 'irrelevant information' can be a source of distraction. Another distraction can come from assuming only one correct solution, as the mind automatically can block the generation of additional ideas.

Since the human mind is a problem-solving machine, all it needs is to keep focusing on the goal from a present condition, where the present condition is either not directly moving toward the goal, or needs more complex steps toward an outcome. Therefore, the problem solvers need to manage the 'mental constructs' that impede their ability to effectively solve the socio-economic problems in the most efficient manner possible.

In many cases we can use heuristics as a tool that would help to restate the problem. Heuristics establish mental shortcuts that would help us attempt better 'optimal solutions'. Heuristics also found to reduce the time and the 'cognitive load' required to solve a problem.

A formula or steps driven problem-solving attempts is another mental blocker. It is like 'following algorithm' or series of sets

of steps for solving a problem which it almost guarantees to get the correct solution but not necessarily be the most efficient way.

*To utilise the factors that influence the problem outcome towards becoming a “High” ‘multiplying effect’ model solution; the problem solver needs to build diversified socio-economic perspectives or issues and use only limited existing resources during the shaping of the model.*

‘Mental fixedness’ solutions is another mental blocker which only can lead to ‘reproductive thinking’ following a sequence known to produce a workable answer, however, it might not lead to any productive solution that most of the socio-economic problems want or need due to its dynamic nature. To understand the dangers of ‘Mental fixedness’ on socio-economic solutions, take for example, how the Ministries of Education in many countries, as part of *Case (1)* in Appendix (2), fail to prepare their youth products to be fit for the dynamics of the labour market.

‘Culture’ can be also another source of distraction as it defines our way of living and our ability to generate ideas. For instance, ‘Communication-difficulties’ within a culture can be a block to our progress in generating ideas towards any effective problem-solving. Let us take the example of the Women Entrepreneurial NGO in Bosnia, *Case (38)* in Appendix (2). When this NGO couldn’t realise the targeted women empowerment after many years of sincere efforts towards specific skills development, they started to appreciate more that their challenge is beyond training services. This women NGO started to realise that being distracted from focusing on a measured contribution of what would differentiate women in the development cycle of Bosnia is one of the main mental blocks that they need to overcome. Rather than focusing on ‘culture demand’ on mainly programs as tailoring, teaching foreign languages and hair salon dressers training courses, the women NGO re-stated its goal towards ‘culture capacity’ programs where women would show its role

in development. Therefore, it is very important to identify the mental block for each socio-economic case. This practice was done for all the cases listed in Appendix (2).

Another important tool to overcome the mental blocks towards effective problem handling is 'knowing the self' which can be generated by 'knowing the community' and those stakeholders concerned with the problem. i.e. Once we know and manage our assumptions, attitudes, behaviours and reactions towards a specific socio-economic problem we can enhance the possible opportunities exploited by that problem. For example, removing the 'fear of failure' and dealing mentally with the worst possible outcome of not solving a socio-economic problem help to 'build the entrepreneurial spirit' for the problem solvers and enable their capacity to manage risks confidently. Table (2-4) is set to exemplify types of mental blockages that are generated by the socio-economic problems selected.

Table (2-4) Types of Mental Blockages that are generated by the Socio-Economic Problems

<b>Socio-Economic Problem</b>	<b>Mental Blockages</b>
So many waiting lists of 'people in need' for humanitarian support with limited resource.	Sympathetic Thinking and control of 'mental fixedness solutions'.
Same as <b>Case (35), Appendix (2)</b>	Beside 'irrelevant information'
Low margin of profit for Villagers for high-end tourism products as wools, crafts, jewellery, etc.	'knowing the self' or 'knowing the community' is weak compared to the demand.
Same as <b>Case (36), Appendix (2)</b>	This lead to 'mental fixedness solutions' and 'reproductive thinking'.

Socio-Economic Problem	Mental Blockages
<p>No appreciation for the benefit and the differentiation of the 'Non-Performing Students' towards the Society and the Socio-Economy.</p> <p>Same as <b>Case (37)</b>, <b>Appendix (2)</b></p>	<p>'Culture' is a source of distraction for 'building the entrepreneurial spirit' as it defines our way of living and our ability to generate ideas. 'Communication difficulties'</p>

*Thus freeing our ability from 'restrictions of imagination' and 'restrictions of visualisation' enhance our ability to enjoy the problem-solving journey with the spirit of creativity. Once we are free from 'restrictions of visualisation' we can gain our normal 'capacity for searching for contradictions' which means we can 'search for relations among problems' and this would take us a higher level of capacity to manage our mental blocks.*

*Management of frustration gives the problem solver the capacity to fill the gap needed to create proper solution values, visualise improved situations, inspire change and create meaningful assets.*

## Generating Solutions

Generating possible solutions is very important for any effective problem solving. Once we generate as many solutions as possible we can start to analyse them and then sample them. There are many several idea-generating techniques, such as free-association style, brainstorming, brain-writing and mind mapping.

*'Dunker diagrams' are used to generate solutions that come from the 'possible pathways to achieve the 'desired state' from a 'present state'. However, the Duncker diagram also addresses an 'additional*

pathway' of solving the problem by making it okay not to reach the desired state. Duncker diagrams can help with refining the problem as well as generating ideas for solutions. The diagram begins with general solutions. Then it suggests functional solutions that give more specifics on what to do. The diagram can also include specific solutions of how to complete each item in the functional solutions. Many cases in Appendix (2) were tackled using the same approaches for Dunker Diagram. Table (2-5) gives example on sub-case (6), in Case (32) where the Police College Academy wanted to solve the issue of low resilience amongst youth community and spread positive influence between them. The college focused on improving the outcome of the 'Police Youth Summer Camps', which is held usually for three weeks only, to bring more "Self-Dependent" youth. The target of the camp is to bring unique results that can be clearly appreciated by the young participants' families and friends. The first step towards building a generalised solution for this issue is to study first the three possible paths: Role of Coaching type, the 'Style of Curriculum' along with the 'Extra-Curricular Classes' and finally of the 'role Parents' in building the transformation of 'self-dependence'. These three paths open three possible solutions that are going to be teste on the field as shown in Table (2-5). Thus we can continue generate solutions after we test the possible solutions and link these solutions to come with most innovative one.

Table (2-5) Representation of 'Dunker Diagram' Implementation in Socio-Economic problem-solving on Case (32), sub-case (6).

<b>Path1</b>	<b>Path2</b>	<b>Path2</b>
Role of Coaching	Type & Style of Curriculum & Extra-Curricular Classes	Role of Parents
<b>Possible Solutions 1</b>	<b>Possible Solution 2</b>	<b>Possible Solutions 3</b>

Well Defined Goals shared and committed by all the stakeholders at the beginning of Camp	Clear student follow-up collaborative plan with students' parents or guardians	Use of Interview and Future Foresight of the Campus Graduates role in the society
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## **Stages in Handling Problem-solving**

Handling problem-solving means we need to select specific points in the problem where we would identify from it the area we collect the observations and get from it the opportunities of the visualised outcome. In some problems we might start our observation collection from the office and based on discussions with the stakeholders concerned and enlarge our investigation to the core of the problem gradually. This can be seen in investigation of the poverty, or police related cases. In other problems we might need to go back to some history, i.e. three years for example, to see how the problem originated. You can see this type of problem handling in healthcare and education related problems specifically as the outcome is a collection of accumulated activities. In other cases, we need simply to go to the field and see how the issue is handled and then design disruptive alternatives that can be tested with the observations opportunities collected from the field. This can be seen in cases where needed to solve the issue of water leakage, or delays in electricity connection, or finding alternatives for better income for the Amazigh village in Morocco, or improving the productivity and return and quality of life of the wool carpet women weavers in Mauritania.

In all the cases we need to start with the 'field observation' and then conduct both unstructured and structured interviews to gather more information about the hidden opportunities inside the problem. This can also be explored through different



experimentation, at different stages of the problem exploration. Here we can determine the nature of the knowledge required for effective problem-solving. Let us take now specific socio-economic issues as the increase of Jewellery theft in the community, which is mentioned in the sub-case (3) in *Case (32)* in Appendix (2), the field here is the jewellery market and their shops in the different outlets. However, for other issues the field would be either the periodical or seasonal training programs, as in the case of police youth summer camp sub-case (6) in *Case (32)*. Even the field in this case can be the classes, or the interaction with the concerned learning process stakeholders, i.e. the parents, the teachers, the camp management, the suppliers and the partners. While in cases of where gambling influence on youth was faced, as in sub-case (4) in *Case (45)* the field were the student schools, the class, the school gang, the gambling stations, the family of youth and the sports clubs. The more we managed to ensure that these field spots were active, the more we could manage to reduce the addiction of gambling in the life of the students.

*Once enough knowledge is collected about the problem, we can start our early attempts for writing the story based on preliminary results which would help us more in visualising the outcome expected before-during-and after the 'field study'.* Once the story is explored in the field we can start correcting the path through learning by practice. This should help to correct the final story based on the latest developments which would help to establish new paths for other stories that will solve the problem.

The stages are built to take us through 'problem acceptance' which would help us to explore the observation of opportunities in the problem and explore the 'inner constructs' of the problem. These 'inner constructs' help us to build 'currencies of problem', or what you might call the 'inspiration opportunities'. These problem currencies are investigated more in order to build the paradox

that comes from the 'problem opportunities' and establish the proposed formula of 'problem solution'. The solution is supposed to reflect the 'influencing without power', i.e. where problem opportunities are turned after being synthesised and linked to create an influence towards a sustainable outcome. That's what we call the 'problem-finding' journey.

## Breakthroughs of Problem-Finding

*Breakthrough in 'problem-finding' starts with 'problem-discovery' which includes first 'shaping the problem' before attempting to solve it. Problem-finding requires an intellectual vision and insight that would help to address its breakthrough points.* I believe in this handbook you'll find many 'problems finding' that brought breakthrough solutions to socio-economic issues which could be generalised for the betterment of our world. For example, the *Case (35)* of managing humanitarian support, there was a need for 'problem-finding' and then 'problem-shaping' so that this humanitarian service would cause the sustenance of poverty. This 'problem-finding' led to a socio-economic breakthrough with a highly differentiated outcome. Hence the 'problem-finding' shifted the performance measure of this humanitarian NGO on how many got out of poverty and not how many people the NGO feed daily.

*For 'problem-finding', breakthroughs require first 'purpose determination' that would give specific function for practical solutions. Then possible solutions would be generated. This should help to establish specific target selection where the ideas are more shaped through more idealized solution followed by more detailed specifications.* Thus, if all the cases in Appendix (2) are reviewed, one would find that what is unique about them is that they went through 'purpose determination'. For example, due to 'purpose determination' we managed to enhance the pickles farmers' quality of life and profit

margin by improving the ‘return on their harvest product’ through starting micro-packaging of high-end pickles products, which is mentioned as *Case (40)*, in Appendix (2).

*In order to accommodate more ‘exceptional and disruptive problem solutions’; more simulations and testing of the problems are needed. Such simulation of problems would start with questioning “why” specific trends occurs in the socio-economic issues under study.* Table (2-6) proposes a general organisation plan for the problem statement which would ensure effective problem-finding where the ideal outcome would be expected. Part of ‘problem statement management’ as shown in Table (2-6) is exploring the problem opportunities parameters (risks and dangers of a problem or its positive alternatives) which could be studied to identify the ‘sources of problem deterioration’ and thus start to define the ‘solution principles’.

Table (2-6) Summary of Problem-finding

<b>General Problem Statement:</b>	
<b>Ideal Outcome Expected:</b>	
<b>Problem Opportunities Parameters</b> (Risks & Dangers of Problems if not solved):	<b>Sources of Problem Deterioration</b> (Powers needed)
<b>Solution Principles:</b>	

To manage the breakthrough solutions in the real-world we should ensure that we have always well-defined, purpose-oriented problem-solving strategy. This strategy should help to keep adherence to an 'outcome-focused' processes.

## **Breakthroughs of Solution-Finding**

*Solution-finding is a technique that would ensure an innovative thinking which brings together all the lists of opportunities generated from socio-economic problems.* Through solution-finding, we can find potential solutions that can be listed and grouped into categories. The solution would be evaluated for its originality, practicality, efficiency, risk, etc. and based on criteria that reveal the nature of the problem.

Another way to deal with 'problem-finding' is to classify the ideas in codifications. For example, as red and green and then yellow as in all the *Cases of (6) and (7)* in Appendix (2) where the types patients, clinics, beds, consultants discharge, medical cases and clinical cases were codified before setting the final outcome. In certain socio-economic projects as in *Case (17)* of women empowerment the setup of a comprehensive outcome that changed the way woman are empowered in Bahrain and improve their social-cohesion, family stability and role in national competitiveness; required more advanced codification of 'problem-finding' that clarified the strengths, the weaknesses, the opportunities and the threats (SWOT).

*Organization of a problem diverse information relates to how well information can be retrieved and to what we can do with that information towards the targeted outcome.*

*Breakthrough thinking problem-solving establish first an organic view of the problem, then establish a purpose for the solution.* Usually the solution here would be more of holistic and interdependent, view which is completely different from the conventional thinking paradigm. Therefore, such solutions would need to be built on assumptions of uniqueness, purpose, solution-after-next, systems and limited information collection. Finding such solutions requires more people involvement, or people design, or betterment of timeline. This is exactly what happened in *Case (4)* in Appendix (2) where the improvement of the electricity supply came through the involvement of all the stakeholder. This issue solution helped to redesign how electricity consumers collaborate with the electricity authority through ensuring that real-estate were ready for inspection without any defaults. This speeded up the connectivity plus ensured minimal consumers' interruptions.

To create a breakthrough, we need to assume initially that the problem or opportunity we are going to confront is different from all others and thus no earlier solution would fit easily to create a realised outcome. *Breakthrough thinking, while attaining a solution-finding make us unique in being 'solution locus'.* The solution-finding locus, therefore, create three major curiosity factors that are related to the development of solution-outcome physical content view (where? and Why?), then the communication view (who?), and followed finally by the time view (when?). These 'curiosity factors' are used in all the cases listed in Appendix (2).

## ***Problem-solving Lab- Case TWO***

### ***Shortage of Emergency Beds***

#### **A) Summary of the Socio-economic Problem Story**

In the corridors of the A&E of the major general hospital in the small Kingdom of Bahrain, you'll sometimes find patients like Ahmed; a child of 5 years-old, crying on a temporary emergency couch while been waiting for more than 10 hours along with a parent on his side. On the other side of the A&E waiting areas, you find a patient like Sara an Indian native, waiting for admission, suffering from stomach pain. An Asthma patient grandma called Ameena would be most probably on the nebuliser near emergency cart waiting for admission permission in the last 12 hours. These are just a few repeatedly daily examples of cases seen in most of the General Specialities Hospitals in the capital cities of the Arab oil-rich Gulf countries. Unfortunately, it is also a repeated seen in many developing and even developed countries to this day.

Although the hospital had many expansions in the last decade, and have reached a capacity of more than 1600 beds; still the hospital failed to provide the necessary beds for emergency patients on time. In order to solve this socio-economic problem without using the normal growth (hospital further extension) decisions, one of the major regional hospitals was explored to see how long does the emergency patients need to wait to get admitted. The study showed a chronic scarcity of emergency beds that made the average waiting time for an emergency case for admission reach more than 72 hours. The challenge of this issue was how to tackle it without extra resources and without the need for major changes in procedures or authorities.

There was no proper basis for the data relevant to the availability and management of beds, beds quality services and therefore there was no real-time data that help for beds vacancy management. The early observation data collected showed that the 'Emergency Patients' are found to wait, on average, more than 12 hours and sometime they might stay up to 72 hours till they can be admitted as an emergency case.

This hospital is unique as only 16% of the world hospitals have more than 500 beds. The hospital accepts many patients who are 65 years old and above who represent the majority of inpatients, even though they are the minority group in our community. Even though the majority of patients in this general hospitals would be admitted to a medical department, there is no information for patients' admission and discharge. The amount of complaints in this hospital, especially about the quality of treatment in A&E and waiting for admission in the medical department is alarming.

No proper communication plan between departments that would help to ease the complexity of the hospital issue in relevant to being more prepared for emergency cases. The continuous improvement of emergency services and expansion of Accident and Emergency Department, called here for short A&E, needed to accommodate patients waiting for beds inside hospital wards is available.

There was no consistency of peer reviews and patient satisfaction programmes in relevance to emergency beds turnover. The level of the culture of hospitality services in the hospital, in general, was very low. There is much instability in the utilisation of beds and turnover in all the wards of medical depts.

There are high bed occupancy ratios and slow bed turnover.

Poor facility utilisation and efficiency. The main service provider for emergency cases is the Medical Departments where they have one-fourth of the total hospital bed capacity and get more than one-third of the emergency admitted patients.

Most patients stay after 5 pm and even over weekends because no discharge plans have been issued by consultants. About 40% of patients in A&E are transferred to medical wards. However, they sometimes need to wait for more than 6 hours; this might be up to 3 days. The challenge was how to inspire the healthcare organisation to improve its total lead time for emergency beds, yet raise the trust in the priority of the emergency cases in admission rights and change the citizens' behaviours regarding visiting the A&E.

### **B) The Classical Solution to such Problem**

The classical solution to this problem would be in one of the following ways:

- 1- Increasing the number of emergency beds by the expansion of buildings and ordering extra staff and equipment.
- 2- Fitting more beds in the public rooms in the A&E.
- 3- Contracting with other Public and Private Hospitals for acceptance of emergency patients
- 4- Increasing prices for those who want to get emergency beds "fast service".
- 5- Defining specific types of emergency cases that are admitted to this general hospital.



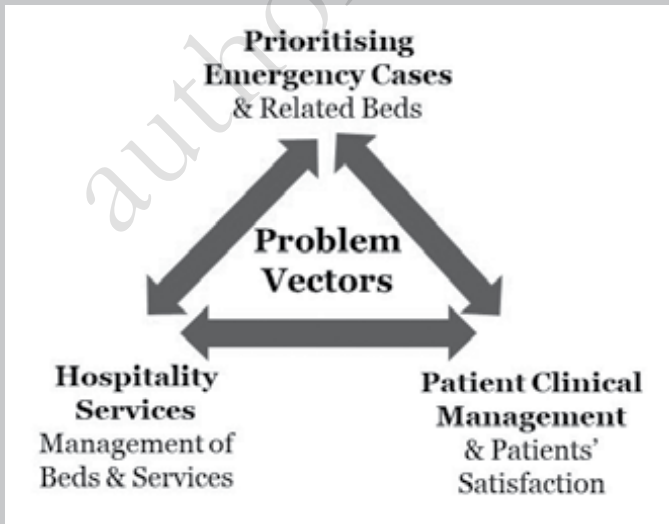
### C) The Inspiring Socio-Economic Solution

In order to come up with an effective socio-economic solution, we need to understand the problem vectors, i.e. its opportunities wealth that lead to the proposed solution and its expected outcome.

#### 1- Understanding the Problem Vectors

The main problem vector for this case is in prioritising emergency cases and related beds, which is followed by a set of processes and procedures that would help to eliminate reasons and practices that lead to admission or stay of non-emergency cases. The other vector is about improving the patient clinical management and patients' satisfaction both in A&E and in-patients which would lead to improving the patients' protocols. The third vector is about the hospitality services that would ensure management of the beds and the services related to the patient before-during-after receiving the right to a bed. These three vectors are represented in Figure (2-6).

Figure (2-6) Problem Vectors of Emergency Beds Case Study



For the first vector about prioritising the emergency cases, the basis and the level of urgency of the cases, the following Opportunities in this General Hospital.

## **2- The Solution Proposed**

The first steps taken was studying how to motivate and inspire the different medical staff (Consultants, Residential Physicians, Nurses, Patient Management Services, etc.) to be stakeholders in this socio-economic issues.

The following motivation was done in order to excite some of the stakeholders of the emergency bed cases service providers:

- a) The (Medical Department), the largest department in the hospital with more 35% of the total beds, was approached to be the focus of this case study. The promise was that the department could a great model for the rest of the hospitals due to the type of cases that usually requires the longest stay and high occupation of emergency beds.
- b) The problem-solving expert facilitated with the Head of the (Medical Department) the project and started by explaining to resident physicians why they were chosen instead of consultants to be the main working team for the management and profound implementation of the project. The Medical residents were mostly young below 30 years old and mostly connected to patients and nurses of the department, on day and night, besides they are the ones mostly available near patients and usually have better communication abilities with all types of staff, with more patience to manage change. After a deep dialogue about the importance of the project to their administrative abilities to manage change, the resident physicians were motivated to create a team to carry out data collection, data analysis and auditing.

- c) The Scale for Observation for the Project was collected to see the sources of influences in the hospital. The plan was to shift the hospital department practices from 'vertical thinking' (every physician and every department have their own system for patients' discharge) to 'horizontal thinking' between departments to collaborate in order to create a better quality of life for admitted patients. The (Medical Department) was set to show a model of 'integrated thinking' department which depends on reporting between multidisciplinary teams. ☺
- d) The opportunities to speed up the availability of beds and lowering waiting times to receive emergency service were explored. The first opportunity was to build a model for bed turnover focusing on available improvement techniques to raise the capacity by more 220 beds to accept more patients per week. This would especially viable for meeting a country demand with limited resources. This needs basic hospitality management practice.
- e) The other opportunity was for increasing the level of medical and health care services provided to patients, since the average age of citizens has increased and there is greater awareness of patients' rights.
- f) Collective understanding of the way resident physicians was managing their time was established so that they can give more time to managing the cases to speed up their release.
- g) Methods of communication between the wards and other service departments, such as pharmacy, x-ray, labs, admin. and the bed scheduling team, were improved.
- h) An assessment of how emergency patients need fast services to be available near the beds was carried in order to speed up the freeing of beds by recovering patients, thus increasing the number of available beds.

- i) To create better competition and integration between 13 wards and type of specialities in the Medical Department, a dashboard for monitoring of beds turnover per physician were established. The dashboard would show colour codes for a patient to be released soon as Yellow, while those need more time (more than 72 hours) as green. The board would have a red colour card for beds that passed the limit expected for the patient case as per the protocol of the case.
- j) Specific team work plan was agreed on how resident physicians would always prepare the patient release documents.
- k) A study on common disorders that cause patients' demand for beds in the (Medical Department) supported creating clearer protocols and clinical pathways care regarding 'discharge planning' and home follow-ups.
- l) The measures gauge for the amount of delay for emergency patient waiting for a bed or need to be discharged, or delays for bed occupancy was changed from days to hours which enhanced the awareness about the wrong practices done that cause the delays by the hours.
- m) A higher flow of communication and online synchronisation between medical wards and A&E to inform them about the beds' occupancy status every hour.
- n) The Medical Team focused on speeding up patients' discharge by focusing on the realisation of 'pre-discharge' plans. Since 78% of patients come from A&E and the discharge time takes more than 10 hours, we need to.
- o) Patient discharge services as: informing the patient and his family of the day and time discharge, provision for the post-charge room, speeding up of lab or pharmacy delivery, provision for the home drop after discharge, preparation of discharge papers before the weekend for consultants signs off; were all applied by the Medical Department team.

- p) Most measures for admission and discharge were improved so that it would balance between patients' rights that usually have the Quality-Cost-Delivery build on it. Setting up a pre-discharge communication plan with patients' relatives. Setting up pre-discharge drugs' delivery.
- q) Utilising Total People Involvement (TPI) with both patients and families in the discharge decision. Provision of pharmacy, labs and transport services.

### **3- Outcome of Problem Solution**

The main outcome of the problem solution is building a new culture with a new spirit that focuses on the patients' rights to receive a bed based on the urgency of the case. The solution outcome showed the role of medical staff in 'Influencing change and improving hospital conditions without the need for extra resources. The opportunities explored and utilised in the solution helped to continuously reframe the mindset of the Medical Staff and reduced their resistance to change.

The ultimate goal is achieved: i.e. improving the quality of life of the emergency case patients and their families, where the model department (Medical Department) can have the power to raise its capacity of patients beds effective management vs. the rising demands in patients' numbers and without depending on more expansions. The value of transparency is also enhanced in the Hospital through maintaining more quantified and measured bed performance for the medical staff and the department. This increased the trust for fairness and empathy. Beds in this general hospital are recognised by the community can be provided for the neediest emergency cases only. This reflected on the reduction of waiting times for arrival and discharge days.

## CH 3 – EXPLORE

### *Practicing Socio- Economic Observation*

authorHOUSE

## Re-Inventing Our Lives through Better Observations

Practicing socio-economic observations need to be organised and purposeful in a way that would lead to organised thoughts, even in disruptive and unorganised conditions.

The influence of such observation capacity is so positive to both our communities and to our attempts in having a healthy productive life. Through focused observations we can get engaged and then involved in our community issues. This level of involvement makes us start to get an unpredictable array of discoveries, empathetic emotions and levels of energy that we never presented in ourselves. Since we are unique and complex creatures we would have a 'deep dialogue' within 'the self' that would explain the reasons for what's happening inside us. At that moment, we could start to have our own 'waves of inspiration' flow, or a type of thinking that extend or replace our previous theories about how the world works and how we are related to it. i.e. it is a moment we would start to visualise our fate, or at least our new role in life. Yes, that what pure quality observation does. It is a true vehicle for exploring better role in life.

*Given the privilege of being able to observe and change 'the self', help us to comprehend and learn many practices that would enhance our functionality and effectiveness in our surroundings. We will start to use observation to pay attention to our intrinsic powers as we try to discover these intrinsic powers in our community socio-economic issues. Sustenance of understanding 'the self' through observation would make us set strategies of how to attain our purpose in life by addressing the opportunities that would be explored for the socio-economic issues.*

*Purpose-driven observations would make us then understand our most important interests and preferences and would raise our level of cognitive and social developments.* Therefore, we should target observations that are relevant to our communities and socio-economic issues if we desire to organise our thoughts and improve the quality of our lifelong learning. The more we continue this selective observation the more we would see the ball rolling faster towards building new insights we have never experienced before.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

*Socio-economic thinking, in general, usually requires specific efforts, such as controlled thinking, in order to manage existing biases towards problem solutions. This would lead to optimal outcomes.*

## **Definitions of Observation**

It can be argued that all social and socio-economic research and problem-solving needs different forms of '*participative observation*'. '*Participative observation*' is a type of 'observation' of data and information about physical, social, economic, political, environmental, legal and technological status, collected from the field by recognizing and noting facts, or monitoring sequence of occurrence. It is the practice of many anthropologists which through it solved many clues over the years.

*'Socio-Economic observation' then is an act that might lead to a remark, or judgment, or inference, or an insight, or discovering potentials for solutions, or opportunities for dealing with community issues, problems and/or challenges.* Sometimes it is a means to create effective transformation or to manage a foresighted



future. Most of the observations open up '*hidden-opportunities*' for the observer. However, this level of observation needs both focus and attentive care. Such level of observation sometimes need to be carefully collected through '*structured-recording*', i.e. registering what is observed and then calculating or describing the characteristics of this observation. Then codification and classification can be followed to make more advanced scientific evidence-based observations that lead to factual based decisions towards a visualised outcome. All the cases in Appendix (2) gone through a unique observation of its own, but mostly all were based on '*participative observation*' too.

In different situations specially in complex socio-economic issues, observations can also act as acquisition of information from a primary source, or synthesis of data, or information from primary, or secondary source. *Most of the socio-economic problem-solving observations would involve optimisation of all the senses.* In science, observation needs to involve the recording of data via the use of scientific instruments. The term may sometimes refer to any data collected during the scientific activity. Observations can be qualitative or quantitative, or selective where only the absence, or presence of a thing would be noted. In pull thinking, observations would be attached to a 'phenomenon' which usually need to be interpreted by counting or measurement.

*During exploration for opportunities, observation would help to formulate a hypothesis, or a forecast. For socio-economic studies observation would be highly linked to "the field". i.e. this means going to the source of the problem or the socio-economic issue by experimentation, or stimulation, or reaction, or integration of all these together.* Many of the coming chapters would discuss each one of these observation related practices in detail along with the most suitable examples and cases.

*The 'quality of observations' plays a major role in the early steps of the problem definition, or during the different problem-solving decisions.* The quality of observations would help ensure the reproducibility of the data by the different observers, or in our case the problem solvers. Without taking care for this important process the results can't be reliable or comparable.

*Observations are key elements in DaVinci's creative thinking methods. In order to 'explore new patterns' and find new solutions to socio-economic problems, DaVinci advises to observe the 'unrelated elements' around the problem, so that to explore the 'solution design opportunities' for the existing problem.* Observation might even require the use of measurement which might be developed specifically to just record and compare the data collected at different times and in different places, by different people.

We will discuss different examples related to applying DaVinci's concepts in solving socio-economic issues throughout the book. However, it is worth to illustrate how that the three DaVinci's principles are applied heavily in Appendix (2) by taking the case of Non-Communicable Disease (NCDs). NCDs is the sub-case (1) in case (6). The '*new patterns*' found for NCDs were found in the increase of risk scale for youth of less than 20 years', which led to questioning the way family physician practice and even the way medical staff, or clinics in primary care are served. Hence, both related elements as clinics timings, cooperation of medical staff, school health visiting services, etc; all were checked and improved in performance. However, the most '*unrelated elements*' were the *mindsets of the medical staff* and the *competition in catching and treating any prone to have risk of NCD's* at any time of life. This change totally the '*solution design opportunities*', from being solutions that are dependent on resources, as specialised clinics and visits or programs, which help early detection of

NCD's as Diabetes, High Blood-Pressure, Cholesterol and Obesity. The new '*solution design opportunities*' that are offered, without extra clinics or resources, were in changing the '*catchment capacity*' of healthcare professional, including i.e. nurses, nursing assistants, health visitors and social workers. The '*catchment capacity*' became the '*unrelated elements*' where the *hit rate* became the measurement. The '*catchment capacity*' challenge was set so that no need for any test to be done before the catchment, i.e. the healthcare workers were expected to catch those with risk of NCDs from just through performing a visual check. This increased the healthcare workers' '*catchment capacity*', in relevance to detection and followup of potential NCD risk patients, from zero or no measurement to an average of 90% of those identified at first time. This percentage was very high and shocking for all the concerned parties, but it has shown the government and the healthcare officials how much they can do to early mitigation to the number one disease. This project helped all those parties involved with the discovery of NCDs to take their responsibility towards avoiding more complicated diseases as Cardio-Vascular and Cancer to spread in coming generations. This alarming exploring by doing observation alarmed all the healthcare workers and the community leaders that they all have a role to play in enhancing the 'Quality of Life' for all types of ages, regardless of the level of development of healthcare services and facilities. NCD's early discovery through using the techniques of gamification observation, which we shall cover in detail, became a national issue and it is not only healthcare staff responsibility any more.

*Reviewing any socio-economic problem regardless of its nature carries with it default solutions preference that comes from foreseen physical or materialistic wealth of opportunities called in this handbook 'vectors wealth'.*

## Philosophy of Observation

Observation besides being a practice it is a philosophy. This philosophy targets to enhance the '*capacity for focus*', '*pull thinking*' and '*triggering inspiration*' through the ability to identify hidden opportunities. As a philosophy, high-quality observation requires '*self-humility*' that leads to humbleness during the process of '*filtering sensory information*' through the thought process.

Observation as a philosophy is very important for *effective problem solution* that leads to *effective outcome*. Since input is received via hearing, sight, smell, taste, or touch and then analyzed through either *rational or irrational thoughts*.

The observation philosophy push for deductions of the collected observations based on the *relationships built of the opportunities* and the *preferences of the consequences observed*, or related to the *behaviours constructed*. Then the observation push for *solution opportunities inductions through relating its relationships and then monitoring the consequences of such relationships*. The outcome of such observations build the implications of behaviour. Table (3-1) shows the importance of *observation philosophy* in problem-solving for one randomly selected socio-economic case, *Case (13)* from Appendix (2), to exemplify its importance in any complex issues.

Table (3-1) Illustrate the role of *Observation philosophy* in Selected Socio-Economic Problems Solved Cases

**Socio-Economic Issues:** Few small family businesses would have a smooth transition from 2<sup>nd</sup> to 3<sup>rd</sup> generation. This would create disruption to the socio-economy where lots efforts and accumulated are wasted both on the level of the families and their community.

**Sub-case (5) in Case (13) – Appendix (2)**

<b>Constructs for Philosophy of the Observation</b>	<b>Details of each Construct</b>
<i>1-Capacity for focus</i>	Understanding and codifying what is the 3 <sup>rd</sup> generation of small family business and what is their level of empowerment?
<i>2-Pull thinking</i>	Starting with 3 <sup>rd</sup> generation readiness, instead of focusing on raising 1 <sup>st</sup> or 2 <sup>nd</sup> generation
<i>3-Triggering inspiration</i>	Benefit of this project on the life of low and middle-class family
<i>4-Self-humility</i>	Understanding how small family business fail from 2 <sup>nd</sup> generation with no clear focused interventions from the government
<i>5-Filtering sensory information</i>	Many statistics for small family businesses, but does not include field data about the situation of small businesses and how they are sustaining their contribution to next generation.
<i>6-Effective problem solution proposed</i>	Formula for Outcome: <i>Sustenance capacity of the economy is related to sustenance capacity of the small businesses</i>
<i>7-Relationships built from the opportunities</i>	Linking Opportunities of small businesses:  1-Building Independent Business Models  2-Ensuring 2 <sup>nd</sup> generation appreciates the importance of family business governance

<b>Constructs for Philosophy of the Observation</b>	<b>Details of each Construct</b>
	<p>3-Raising the capacity, the differentiation of the 2<sup>nd</sup> generation</p> <p>4-Setting the smooth transition mechanisms within the families generations.</p>
<i>8-Effective outcome</i>	Development of long-term sustainable economy construct.
<i>9-Rational or irrational thoughts</i>	Example- 3 <sup>rd</sup> generation capacity for the development of future businesses
<i>10-Preferences of the consequences observed</i>	<p>Three Models proposed:</p> <p>Model 1- Governance of Family Business that reached 3<sup>rd</sup> generation</p> <p>Model 2- Model of 3<sup>rd</sup> generation readiness for future businesses</p> <p>Model 3- Model for new entrepreneurs and families' business to build or re-build resource independent business models.</p>
<i>11-Behaviours constructed</i>	<p>Future Foresight</p> <p>Pro-activeness</p> <p>Productivity</p> <p>Self-Assessment</p> <p>Governance</p> <p>Resilience Economy</p>

Constructs for Philosophy of the Observation	Details of each Construct
<p>12-Solution opportunities inductions (reflections)</p>	<p>1-Reflection on the best techniques of smooth families' business transitions</p> <p>2-Reflection on the 3<sup>rd</sup> generation qualification requirements</p> <p>3-Reflection on the future foresight for small business per sector and type of generation coming in.</p>

Thus the philosophy of the observation enhances our capacity to explore the intrinsic human strength, or the organisation, or the community powers. *The practice of observation is a physical process and a philosophy that is essential for every organisation and community so that we spread the spirit of scientific culture towards moving from normal growth to realised development.* With selective, structured and unstructured observations can be amplified and used as a tool to enhance both total people involvement (TPI) and total people engagement (TPE). Both techniques found to help move the organisations and the community towards *absorption and realisation stages* without the need for major events, or frequency of repetitions, or time factor. Figure (3-1) shows how the philosophy of observation leads to absorption that would help to analyse and evaluate, create and then reflect based on effective application. Understanding this philosophy would differentiate one problem solver from another.

Figure (3-1) Process from Observation till Reflection



Classification of the socio-economic problem after the observation help to build-up more understanding of the environment and the type of stakeholders. This understanding would help to develop visions and clear strategy for dealing with the socio-economic problem in a differentiated way which would overcome its complexity or ambiguity.

## **Observations for Complex Socio-Economic Problems**

*In order to raise the capacity of any organization, or a community to shape its conditions, or controls what problems or challenges happen around them we need to follow specific methods for observations.* There are many methods for observations, however, for the purpose of this book, we focus mainly on observation methods related to managing and solving complex socio-economic problems.

The methods of observations help to produce effects that are *reflected in the actions and behaviours of the mediators and problem stakeholders.* The more methods of observation are collected *through unstructured approaches,* the more we need to be *structured in our synthesis, analysis and reflective judgements.*

*Socio-economic problem vectors open up a wealth of opportunities that help to improve the scale of solutions possible to be explored by the problem solver. Realising the problem vector lead to better problem accessibility and integration with the socio-economic status.*

Experienced socio-economic problem solvers would usefully look not for the sources of the problem only, but for *the sources of the inspiration and opportunities in the problem.* This methodology *brings in insights and create stimulation* that usually would turn the exploration for a problem solution to be a source for inspiration.



The more we continue with this in mind the more the exploration for opportunities would create a sense of *life-purposefulness while targeting a problem outcome*.

## **Accumulation of Observational Learning in Complex Socio-Economic Issues**

*Learning by observation is one of the main parts of complex socio-economic problem-solving. Through this social learning and innovation tool, we can learn by observing others which help in developing our perspectives. Through observation, our curiosity is raised to experiment.*

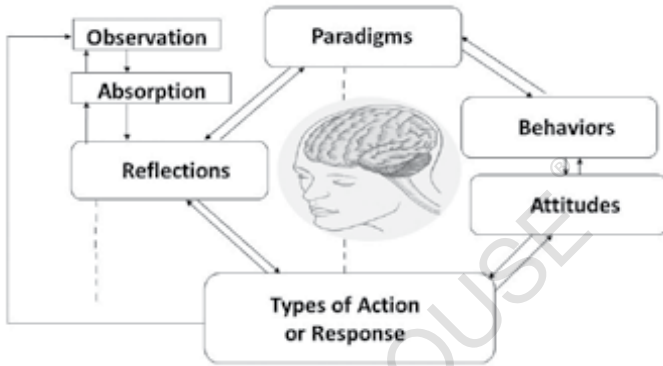
Through observational learning the problem investigators would use the *different brain sensory capacities* to enhance their attention. This *type of excitement* enhances the *memory retention* and makes the problem solver remember *what type of attention need to be focused on*, including the *exercise of coding, rehearsal and mental images*.

The *intention of the reproduction* that is taken during observational learning help to improve the *physical capabilities and self-observation*. Through observational learning we would know if the problem need to be re-structured or to improve its resolution.

Observations are very *effective cultural change* methods since they affect the people and the *cultural assumptions* and its related paradigms as they are the *source of our satisfaction or dissatisfaction* which influence our attitudes and behaviours. As shown in Figure (3-2). *The consistency of selective observations helps to create new assumptions that lead to the construction of new behaviours and newly developed attitudes. With the accumulation and interpolation of observations, we will increase the action of response and thus we would increase our ability to effectively reflect on the selected observations. Accumulated observations, or the collection of*

observations help us to move towards stage 'beyond observation', called 'absorption' that creates even better reflections.

Figure (3-2) Cycle of Observation effect till stage of Reflection



*Focused observations repetitions help to create “Appreciative Enquiry” that leads to more reflections and positive insights. Thus all the types of observations repetitions that come from failures and/or appreciations lead to better levels of humans, or organisations, or community capabilities, changeability’s, competencies and capacities. Thus one could say that observations are the most important stimulant that leads to the excitement and development of the organisations and communities. With observations, we build holistic feelings that move, or motivate the powers of the mind, spirit, heart and to deal with the physical status of the problem investigated.*

## Specifying the Types of Observations to be Gathered

The first step to creative, inspiring problem-solving process is to specify the information and the observations to be gathered about the

characteristics of the problem and the opportunities it carries inside its shell. This specification is one of the most essential requirements to effectively solve the correct problem. It is a specification that help to proceeded to exploring different types of information, in order to answer key questions that each problem carries.

*By specifying the types of exploration and observations; the problem solver could identify and specify the 'problem repeated practices'.* This means we need to carefully consider and observe the sources of problem-finding such as facts, concepts, assumptions and processes. These sources of influences collectively accumulate to build three main constructs: availability, effectiveness and efficiency. i.e. the more we identify sources of influences from these three perspectives, the more we would be able to tackle the problem effectively and thus can discover the hidden opportunities in relevance to the organisations and the society.

Table (3-2) shows how the leads of a socio-economic problem such as the increase in 'unemployment inequality' amongst women specifically would help to develop leads that would be the constructs for the story visualised. Both the problem leads and the constructs of the story would help to specify the type of observations to be collected.

Table (3-2) Specifying the types of observations to be collected based on the problem type and the story visualised.

<b>Problem</b>	<b>Story Visualised</b>	<b>Observations/ Pilots</b>
Lead 1- Currently women are the highest of graduates from Higher Education with even higher grades (70%) better than men.	-The default is that graduates should have project planned before graduating.	-By type of background & Speciality  -By age

<p>Lead 2- Business Spirit in Schools or Universities are still low (where women are the highest beneficiaries)</p>	<p>-Each of the graduates would get his/her business project funded with promise that they would still get 'unemployment-benefits' if they fail.</p>	<p>-By city -By capacity to work as a company -By capacity to establish Family Entrepreneurship Company</p>
<p>Lead 3- Counselling of the Unemployed in Ministry of Labour is still weak</p>		
<p>Lead 4- Highest Sponsored beneficiaries of post-graduate sponsored training are women</p>		

In order for the socio-economic driven observations to come up with sustained outcomes that change the life of the beneficiaries, we need first, as shown in Figure (2-3), to optimise the opportunities around the problem. This requires effective deployment and application of the results of explored discoveries that come from the exploited opportunities.

*There are many socio-economic perspectives in each problem that would lead to differentiated solutions. Some perspectives show how the problem can be a source for holding the society together as it helps to create 'common issues of concern' as issues of inequality, poverty, migration or taking care of ageing or vulnerable people.*

*Optimisation of the opportunities requires that the 'power of discovery' be generalised among the community through effectively creating 'reference models solutions'. Once the model solution is horizontally spread in the community and in different types of organisations we can prove that the outcome could be sustained. This is illustrated*

in Figure (3-3) which shows another level of expectation been created towards the outcome targeted. At this stage, we would utilise the opportunities that the observation brought to create analogy or even inspire the concerned parties, be it organisations or other functions or disciplines within the community.

Figure (3-3) Illustration of Main Steps that Observations brings towards Sustained Problem Outcome.



## Exploring Socio-Economic Opportunities from Problems

Exploring opportunities in the socio-economic problem requires practices of exploration that starts with observations, questioning, curiosity and learning by doing or learning from mistakes.

*Despite that the world problems are going towards more complexity, also it is giving us more opportunities that never been exploited before.* Socio-economic problems provide opportunities for improving social welfare of our communities through bringing in proactive solutions that prevent things away from decline.

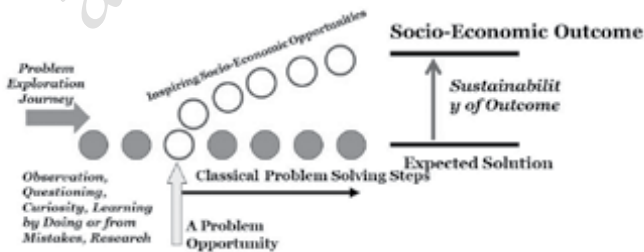
*Being independent with opportunity driven mindset help to build autonomous communities and organisation that have differentiation in their 'capacity to learn'.*

*Opportunities centred mindset helps to reduce the domination of specific perspective or social climate changes.* Entrepreneurship as a spirit emerges as we start to see opportunities in the problem and recognise them. Thus, promoting entrepreneurial behaviour at both organisational and community level help to establish an opportunity centred proactive problem-solving culture.

*Being independent with opportunity driven mindset help to build an autonomous communities and organisation that have differentiation in their 'capacity to learn'.* A problem opportunity, as shown in Figure (3-4) would bring in more inspiring socio-economic opportunities that would differentiate the socio-economic outcome from the expected solution. Therefore, the problem-solving steps can lead to either a perishable solution or a sustainable outcome.

Figure (3-4) Steps for Exploring Socio-Economic Problem

### Exploring Opportunities in the Problem



## Streamlining the Opportunities in the Problem

*The processing of information and streamlining help to create more effective judgments and decisions during the problems solving.* When opportunities in the problem are explored we can start to streamline so that we shape it for the best outcome. *Streamlining the opportunities of the problem means we can question what else does the problem resembles and what other ideas does it bring.* Investigating opportunities in the problem makes us learn to adapt. Therefore, questions as what if the idea is scaled down, or what if the idea is multiplied? What changes can be made further? What if the idea is scaled up? How else this idea can be used? Or what other things this idea can be used for? All these questions would help to develop the efforts to streamline the collection of opportunities towards the best problem solution.

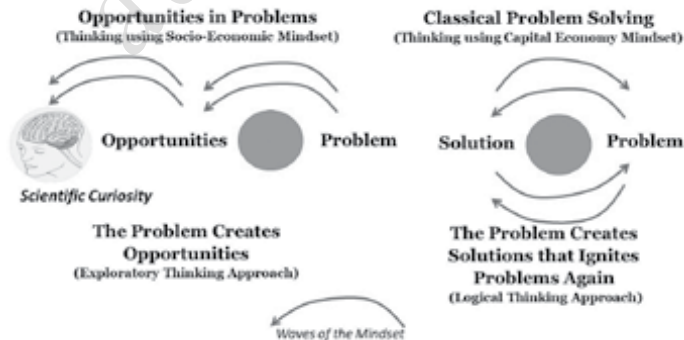
*Streamlining can come from the problem opportunities scope elimination or removal of the non-value-added in the problem solutions.* For example, when we try to see what else should be omitted? What should be divided? What should be separated? What should be miniaturised? What should be subtracted? What is unnecessary to be removed? We are in reality trying to remove waste from opportunities, or at least aligning it with the limitations of resources, time and scope, or to meet management of change plans.

*The exercise of streamlining help also to trigger more excitement to the frontal lobe of the brain through seeing the opportunity from different perspectives thus exploiting more hidden opportunities from the opportunity itself.* For example, when we start to see what if we see the opportunity from another perspective? What if the opportunity is turned inside out, or opposite, or reverse, or backwards?

Combination of opportunities is used as a streamlining method where the unrelated opportunities explored can help to bring in new ideas. The problem solver should try different combination alternatives till a 'stable combination' is reached. Combining transformed opportunities brings in new trends and processes. The new combinations of existing opportunities help the ideas to be combined. Thus questions about combining units or materials or methods help us to see the hidden opportunities around the socio-economic issue.

Classical problem-solving creates solutions that ignite problems again. This ignition is caused mainly by the way of thinking and the use of a capital-based economy mindset. This mindset drag usually the logical thinking to be dependent on resources in approach or solution it proposes. While when we utilise the independent scientific curios-thinking mindset, we'll see that we can see great opportunities in the problem. This mindset comes the more we practice exploratory thinking. Figure (3-5) shows the differentiation between each mindset.

Figure (3-5) Differentiation between Opportunities Based Problem-solving vs. Classical Problem-solving Mindsets.





After identification of opportunities, the concept of problem solution is usually developed then a proposed solution outcome would be developed.

## Exploiting Opportunities from Observations

J. P. Morgan used to believe that problems can't be solved until they are reduced into a simple form. Today I believe that *without this simplicity we would not have effective judgement in time during the problem solving process*. Therefore, one of the most important techniques to deal with complex socio-economic problems is innovating in the way that opportunities are exploited and kept simple in reference to the observations collected.

*Opportunities can be exploited from knowing who define the problem and what is the desired state where the outcome or the solution of the problem would be declared.* Another example of opportunities that can be exploited from the observations come from realising what is the extent of the damages, or the challenges that the problem brings.

There are opportunities that can't be seen easily inside each problem or challenge, these are called 'hidden opportunities'. *Most of the time hidden opportunities can't be seen due to the nature of the socio-economic problem complexity, but also due to our way of thinking and our constrained mindset.* Therefore, today we notice the spread of behavioural economics, neuroscience and inspiration problem solving labs which bring in different methodologies that explore the 'hidden opportunities' inside many of our life related problems and from different perspectives. All these methodologies work to find hidden opportunities in the processes of the service delivery from the beginning; in order to use them for the manipulation design of the behavioural decisions.

In this handbook we focus more on illustrating how inspiration economy problem solving labs, called for short 'IE Labs', target intentionally to enhance the process of discovering hidden opportunities gradually through the practice of observation that leads to first to an absorption stage. Then these discovered 'hidden opportunities' would lead to a level of realisation that would help to overcome the complex challenges, and if well-managed would lead to sustained achievement.

*Almost all the socio-economic issues that are addressed only from one perspective shows that the solution attempt was without 'clear visualisation'. Such socio-economic issues would have the potential of coming back again, if no alternative solution(s) other than resource-based-expansions solutions are proposed.*

To show practically how opportunities are exploited from observations, five socio-economic issues were selected from Table of Appendix (2) and were reflected in Table (3-3) with different background and level of complexity. Socio-economic issues as failure to optimise the utilisation of the role of thermal water to the benefit of health tourism in a Bosnian village is illustrated through its treatment SPA centre services. The other issue was the quality of life with people with disabilities that managed through NGO's. The third issue was the challenges of 'children of unknown parent' Home-Care centres. The fourth issue taken was discussing the effective outcome of Women-Empowerment associations. The last issue here shows how we can exploit the opportunities for a village through their honey and fruit juice factory.

Table (3-3) shows examples of early observations from the first field visit for the processes that influence the socio-economic status of the community. The table shows how the observations and the hidden opportunities build-up the proper information on the problem to generate potential solutions and outcomes.

Table (3-3) Relation between Observations and Opportunities that are generated from the Field Visit

<i>Field Visit Observations</i>	<i>Opportunities Seen</i>
<b><i>Socio-Economic Issue: No clear value-added contribution for 'Thermal Water Treatment' in the village SPA Services</i></b>	
<p><i>Obs 1-</i> Variety of Treatment Specialty</p> <p><i>Obs 2-</i> Level of Services to be challenged</p> <p><i>Obs 3-</i> No enough studies to prove the uniqueness of Water Treatment</p> <p><i>Obs 4-</i> Only 50 % of the treatments use water</p>	<p><i>Opp 1-</i> Need for compiling the data on cases of Water Treatment effect</p> <p><i>Opp 2-</i> Need for classification of the conditions of the patients (<i>range, diseases, sex, etc.</i>).</p> <p><i>Opp 3-</i> Can measure and publish the impact of water treatment</p> <p><i>Opp 4-</i> The Wealth of 'thermal water' services are no clearly appreciated</p> <p><i>Opp 5-</i> Improve the ways of packaged services are delivered</p> <p><i>Opp 6-</i> Many possibilities of sharing- economy in tourist attraction marketing program</p>
<b><i>Socio-Economic Issue: Unstable quality of life for People with Disability getting services through NGO's</i></b>	
<p><i>Obs 1-</i> Operating cost</p> <p><i>Obs 2-</i> No evaluation of type of strengths within targeted sector</p>	<p><i>Opp 1-</i> potential investment in people with disabilities</p> <p><i>Opp 2-</i> Classification for type of abilities available</p> <p><i>Opp 3-</i> No trust funds that support such NGO's</p> <p><i>Opp 4-</i> No measures on tangible results of the services delivered</p>
<b><i>Socio-Economic Issue: Children Of Unknown Parent Home Care</i></b>	

<b>Field Visit Observations</b>	<b>Opportunities Seen</b>
<p><i>Obs 1-</i> Not clear whether causality of cases is deeply analysed</p> <p><i>Obs 2-</i> Total dependence on external funds</p> <p><i>Obs 3-</i> 140 children to the age of 18</p> <p><i>Obs 4-</i> No clear followup plans for youth after leaving Home Care Centres</p>	<p><i>Opp 1-</i> Focus on the three parties for volunteering (financiers, intermediaries, beneficiaries).</p> <p><i>Opp 2-</i> Potentials for creating Trust for Home Care</p> <p><i>Opp 3-</i> No efforts for preventing repeat of cases (i.e. Children with unknown parents) and to prevent the problem from the source</p> <p><i>Opp 4-</i> Follow-up cases and ensure their total independence &amp; 'leading by example'</p>
<p><b><i>Socio-Economic Issue: Enhancing the level of Women's Empowerment targets through NPOs'</i></b></p>	
<p><i>Obs 1-</i> Focus on the Non-Profit Organisation (NPO) and for Profit Org.</p> <p><i>Obs 2-</i> Research in the field of women</p> <p><i>Obs 2-</i> Women empowerment is seen from services angle only.</p>	<p><i>Opp 1-</i> Strategic planning and impact measurement focus on basic empowerment through services mainly</p> <p><i>Opp 2-</i> Re-evaluate type of woman competitiveness training programs and their value towards 'women development' and 'women advancement'.</p>
<p><b><i>Socio-Economic Issue: Improving the villagers return of honey and fruit juice factory</i></b></p>	
<p><i>Obs 1-</i> Market (Supply vs Demand)</p> <p><i>Obs 2-</i> Increasing consumer confidence</p> <p><i>Obs 3-</i> No clear measures to enhance market size &amp; differentiation of product</p>	<p><i>Opp 1-</i> Research Focus on high-end products supply chain (i.e. honey)</p> <p><i>Opp 2-</i> Conduct market study to re-packaging, distribution and supply chain of the honey and fruit juice.</p> <p><i>Opp 2-</i> Diversify the villagers products using the factories facilities.</p>

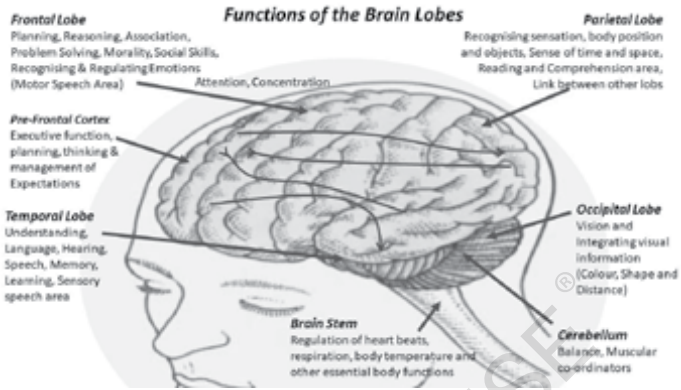
The table shows that when gathering information about a problem, there are several different methods one could use. It is worth to mention that no one method is better than another and that opportunities exploitation depends on many conditions that surround the socio-economic problem. However, one needs to confirm that the content of the observation we look for during the field visits can be retrieved from main sources which start with analysis of measures and indicators that comes from conducting surveys, interviews and identifying studies and published statistics.

Other sources of observation would be technical experiments and piloting. Both the quantitative and qualitative approaches should help to support further focused observations that come from monitoring or measuring the processes related to the scope under investigation.

### **How Observations Excites the Brain?**

*Once we start the observation both the frontal lobe and pre-frontal lobe in the brain would be excited through the processes of attention and concentration.* The frontal lobe would help to execute the association, recognising and reasoning, as shown in Figure (3-6). While the pre-frontal lobe shows the executive functions that would help to continue the exploration for the problem-solving process. The exercise of the observations would create further waves or association pathways in parietal, temporal and occipital lobes.

Figure (3-6) Excitement of the Brain Lobes through Observations



*Association Pathways between the brain lobes shown in Figure (2-7) helps to show how the problem observation stimulates the brain neurons and cortex. When one area of the brain is activated due to the curiosity that the problem observation brings, other areas along the pathway respond. This curiosity starts through the Frontal Lobe excitements which come through observation and opportunities exploration. Such exercise would create impulse control, better judgements and more focused initiations.*

## **Problem-solving and Quality of Observation**

*Since the problem-solving comes from discovering opportunities, the socio-economic problem solvers usually give great importance to the quality of observations and the transformation of these observations till the state of absorption and then realisation state are reached. This transformation helps to set the psychology and raise the capacity of the mindset of the problem solver. The cognitive processes during problem-solving observation help to build the experiential learning and eliminate any focus distractions.*

One of the challenges that weaken the capacity of the problem solver is the dependence on third-party reporting the observation. Third-party observation usually characterised as of low reliability and the low quality collected data. Problem-solving capacity differs when the information needed by problem solvers is readily available through primary data where the field could be reached easily. Maybe this justify Einstein's way of seeing things and where he was quoted saying that we should never impose our views on a problem; one should rather study it, until the solution reveal itself.

*Most of the outstanding socio-economic solutions build communications that create bridges between communities, or agreements between parties, or cultural development deeds, almost always have been dependent on story visualisation them to transform to the formula of (capacity vs. demand).*

Dale Carnegi used to say that the biggest problem in life is choosing the right thoughts, which usually comes from the quality of information synthesised. *Therefore, locus of problem-solving may iterate easier when the observation is collected by unpolluted noise, i.e. the data collected with clear use of the senses from the field, or through primary data collection that uses interviews, focus group besides questionnaires and surveys.* This reduces the iteration and the cost of the data collected while, at the same time, improve the availability of the information. This create less complex problems or enhance our capacity to manage the problem complexity.

The practice of observing a wild animal coming near you or near an object help you to generate forced ideas and observations. The brain would react to such an observation by empowering us to break out specific habits or think in different ways. Therefore, we believe that observation is the most important application where we would ensure that the inspiration cycles of the brain are realised. Through applying the activities that follows the observation, such as codification of the problem and then 'classification' of its potential, i.e. before we do final solution 'stratification', we can

make our mindset reach the status of realization. The more we collect observations through: implementation, trial and testing, changing the setting, i.e. using different level of illustrations and demonstrations; the more we can enhance our chances to later capture and even create opportunities with confidence.

*Once a story is visualised for a socio-economic issue it would start to develop a solution that manifest 'social functions'. These social functions would establish specific recognized, or intended 'social patterns' which help to re-invent our communities lives and our life too.*

*Part of the application that will help to enhance our ability to discover the hidden spots inside any problem is our ability to absorb the essence of the problem and what messages it does send.* All the cases at the end of each of the ten chapters would give live examples of how the absorption happens. In order to reach this level, we need to use more classification analysis supporting with the drive to enhance our forecasting. The absorption here would come more and more through modification and exploration of the problem definition and way it is presented or constructed.

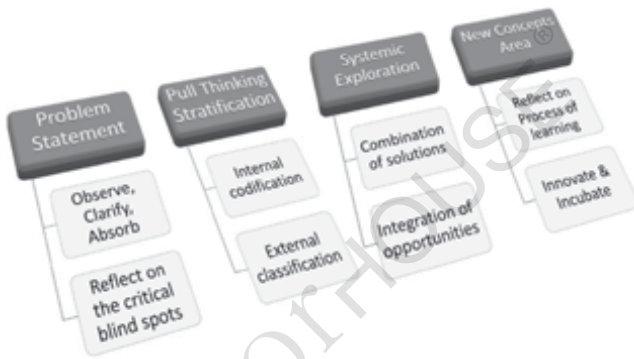
The popular economist Malcom Forbes used to say that it is much easier to suggest solutions when you don't know too much about the problem. Therefore, once we start deep analysis of the problem, clear absorptions we start to generate the realisation stage. At this stage we will confidently try to arrange, connect, divide, infer, separate, classify, compare, contrast, explain, select, breakdown, correlate and then discriminate the problem. At this stage we will start to think empathetically, where we start to see the parts and the whole. A good reference of this empathetic thinking is Figure (A-3-1) in Appendix (3).

This thinking should help us to build 'synergetic practices' that would lead to rational processes that differentiate the way problem is thought about and handled till the final solution. Therefore, the



problem-solving processes and statements are considered to be very important for creating better stratification of solutions and which would lead to (pull thinking) sampling and solutions. To reach such stratification we need systematic explorations that help to discover the new concepts through innovation incubation as in Figure (3-7).

Figure (3-7) Use of Problem Statements to build up steps for Concept Generation



The higher the quality observations the more we can generate socio-economic insights which help to anticipate the opportunities in the problem. This raises the abilities to combine elements of knowledge and expertise besides managing diversified ideas and approaches relevant to the problem solution. Therefore, observation quality help to overcome the fixed patterns of thought and to gain new ideas that underpin creativity enhancement. These pattern of thought also helps to establish better intuitive development of visualised solutions.

## Problem Observations Bias

To find a good solution to a problem, one need to make sure that the solution won't become the next problem. This can be avoided

if we are not biased to the problem. If the observation is biased, the core of the problem won't be really solved, nor it would be properly addressed.

Since the collection of the observations are done by humans who can't function or record observations impartially, there is a high probability that observations would be biased. Therefore, observations have to avoid previous human perceptions to avoid unconscious process of abstraction. As this biased abstraction leads to bias of the incoming sense of data.

With biased abstraction, many of the collected data won't be appreciated or properly seen, same would be the case for the opportunities. Many problem opportunities would be wasted due to the "blind-spots" in the mindset which is psychologically called "a schema". This schema controls the way data is collected in the problem.

*The continuous reconstruction of memory during the problem-solving leads to building an internal value that should avoid the bias. The problem solver need to manage the biased conscious and unconscious observations and build a psychology that calibrate with the dynamics of the problem, so that new discoveries can be expected.* For example, the problem solvers might face a 'confirmation bias' where they would tend to search for the information that is in agreement with their biases rather than seeking to disconfirm their biases. When the problem solvers overestimate their ability due to their perceived previous knowledge, this is called 'Hindsight Bias'.

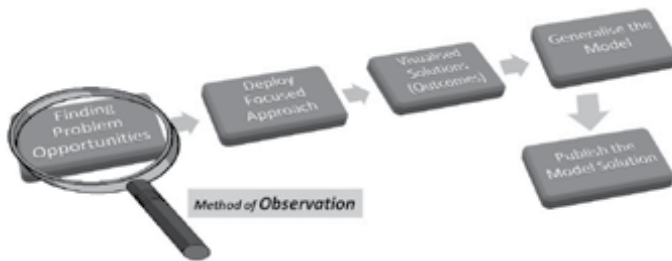
Such 'visualised stories' would help to identify the undesirable consequences of a 'social pattern' that should be eliminated and thus finding better problem solution.

*The biases increase if the problem solver ability to learn from previous errors became blocked due to “knew all” syndrome. Biases can increase as estimates are based upon initial experiences and which anchor the problem solver judgments on limited pieces of information. This is called ‘Anchoring Bias’.*

There are also two more important problem biases that are caused after the observation: ‘Representativeness Bias’ and ‘Availability Bias’. After observation, the problem solver might judge individual instances based on the degree to which they view the opportunities in the problem. This is what meant by ‘Representativeness Bias’. *The problem solver might estimate the likelihood or probability of a problem outcome based on whether relevant examples can be retrieved from past experiences. This is called ‘Availability Bias’.*

All these biases need to be taken into account when trying to target a specific problem. *Once the organisations or the community start to build its learning on the aligned and concentrated energy, i.e. without bias, we would have significant (large) improvements towards a generalised problem outcome, as shown in Figure (3-8).*

Figure (3-8) Finding Socio-Economic Problems Solutions through Unbiased Observations



## **Visualised Socio-Economic Observations**

Visualisation before and during the observation process help to improve the socio-economic outcomes. Through visualised observations, focused approaches can help to shift the intention of solving a socio-economic problem from being driven to delivering a Gross Domestic Product (GDP) based economy to more of productive economy that is focused on Genuine Progress Indicator (GPI). GPI is an important target for any socio-economic problem-solving, as through it we identify the blind-spots of where resources are utilised, or where solution-bottle-necks occurs. Thus, by having observations that are not focused on enhancing the GDP, but in fact focused on the development of GPI, the resources would directed towards voluntary work. This enhance the level of society learning and would help to deliver many effective problem outcomes.

In order to support the efforts of transforming our problem solving capacity from being GDP (resource based growth) outcome to more of GPI (genuine productivity) outcomes, the following Table (3-4) observation checklist were developed.

Table (3-4) Checklist for Observations that would ensure solutions transformed towards GPI (Genuine Productivity) Outcomes

<b>What</b>	<b>Why</b>	<b>Where</b>	<b>Who</b>
What is the purpose of our (organization) existence in this life?	Why our Services / Products are unique?	Where we differentiate ourselves from others?	Who would help us to differentiate our products & services?
What to do?	Why we do what we do?	Where to do it?	Who does it?

What is being done?	Why this way being done?	Where is it done?	Who is doing it?
What should be done?	Why should we do it in a different way?	Where should it be done?	Who should be doing it?
What else can be done?	Why we need to do the new way?	Where else can it be done?	Who else can do it?
What else should be done?	Why we should do something else	Where else should it be done?	Who else should do it?
What is the type of waste or stress or instability in our business?	Why there is these type of waste or stress or instability in our business?	Where is waste or stress or instability in our business?	Who is doing waste or stress or instability in our business?

## Observing to Challenge the Usual Problem Assumptions

Successful problem solvers get to the root of the problem through observation to understand more how the problem is originated. *As when we understand how the problem originates we can prevent it re-occurrences.* The way we observe things and ask our questions help to clarify the situation about how the problem occurs.

*To ensure effective exploration of the problem we need to challenge the assumptions around it, where most of these assumptions create chains in our mindset that this problem can't be solved without being external resources dependent. Therefore, the problem origination and its possible reasons need to be determined.* This means we need to explore the problem from different perspectives with more

original questions. This might help us to re-define the problem which would differentiate the problem solver perceptions and shack-up any previous assumptions of dependency on specific external resources. For example, in almost all the cases in Appendix (2) the socio-economic problems were assumed by its stakeholders that they are resource dependent. Let us take the *Case (7)* sub-case (1) in Appendix (2) which is about the availability of the emergency beds. All the stakeholders, i.e. the government, the parliament members, the ministry of health, the medical staff, the patients and their families and the media have made the decision that this national general hospital which have been expanded many times to reach a capacity of 1200 plus beds need to be expanded more with 200 beds in order to reduce tragedy of the emergency patients who wait for more than 16 hours in average to get admitted. This assumption was shaken by showing how much a ward amongst the 50 specialty wards could save, if beds, patients, medical staff, discharge time and allied services are re-engineered and managed properly. Shaking this assumption not only saved the limited resources government US\$200 million, but saved an annual running cost of US\$20 million, plus improved patients care and developed staff synergy in working together as teams.

*Usually, the 'value stream mapping' process of the story, i.e. the most important values that are carried within the problem story; helps to excite the mindset to start acknowledging the depth of the problem and in creating more effective solutions.*

Let us review also *Case (28)* sub-case (1) of fatal traffic accidents. In this case, and after the traffic police publish its annual report, the country used to witness a blame-based debate in the media suggesting that the solution to the alarming problem of fatal traffic accidents is to be more stringent and raising the fines, or the jail or licence penalty of vehicles drivers. The steady assumption here is that all the faults as can be seen by the logical observations

comes from the uncommitted vehicles drivers and it is nothing to do with the traffic management policies or the government actions. In order to shake this assumption, a 'non-punitive scheme' solutions were suggested. The idea of the 'non-punitive scheme' solutions is to reach more sustainable outcomes that would make all the stakeholders build together a road model that would be reference for being fatal accidents-free. This assumption helped all the concerned parties to start seeing different types of warning signs, bumps, speed self-monitoring meters that can help in cautioning the drivers, regardless of his attention condition. The improvements of road designs specifically in the 'black-spots' where fatal or near-fatal accidents occurred were tremendous. These same powerful solutions were applied too to many non-government cases including airlines, humanitarian agencies, etc. *The message here is simple; yes, you need to shake-up the assumptions of any specific resource dependent solutions, in order to come up with sustain socio-economic outcome, otherwise you didn't do a real improvement!*

*Then one could say that in order to free the problem from being linked to any resources we need to observe and visualise its business-model. To do this we need to define the present state (i.e. through observation) and the desired state (i.e. through visualization); in order to have the capacity to re-align ourselves to the dynamics of the problem.* For example, let us take the *Case (38)* in Appendix (2) where the Women Entrepreneurial NGO (we shall call for short here WEN) in Bosnia that targets to create more women development. The first cycle of observations in Table (3-5) then need to be set to the level of exploring that WEN is really working on and for women-development rather than women-empowerment. This should be the first cycle of observation collected.

As we start the second cycle of the observation, we need to re-state where the problem occurs, with a focus on staying more

resource- independent where exploring for the opportunities in the problem. Table (3-5) shows an example of how observations are collected during stages of pre-observation and then how the data of the first cycle observations were linked to the second cycle of observations. The last column in Table (3-5) shows how the different observations helped to identify or extract the opportunities, in the case of women development potentials.

Table (3-5) Illustrates how the Pre-Observations till the Opportunities Identification are logged

<i>Type of Cycle(1) Observations</i>	<i>Data to be collected</i>	<i>Type of Cycle (2) Observations</i>	<i>Opportunities (Identified &amp; from cycle 1 &amp; 2 observations)</i>
1-Define what business you are in? 2-Define what you target to achieve through this business in this life? 3-Focus on Cost & Profit Centres as being (Non-Profit and For-Profit Org.) 4-Evaluate type of Research in the field of women-development role in the Northern of Bosnia and the role of WEN.	1- Evaluate the outcome of Tailoring & other similar skills driven courses in the job creation or development of business for the women in Bihac. 2-Specify type of research that pushes woman contribution in the Bihac Economy	1-Need to define and/or re-define women empowerment based on the data analysed and synthesised. 2- What are the type of learning/ unlearning those women benefited from services? 3-What type of training that focus on the Development & the competitiveness of the employed women?	1-Clear pathways from successful women-empowerment to women-development and women-advancement can be built. 2-Attitudes towards women-empowerment is more acceptable in Bosnia today, but need measurements for the level of acceptance for women-advancement.



<i>Type of Cycle(1) Observations</i>	<i>Data to be collected</i>	<i>Type of Cycle (2) Observations</i>	<i>Opportunities (Identified &amp; from cycle 1 &amp; 2 observations)</i>
5-Evaluate the level of Strategic Planning and impact of measurement 6-Re-evaluate Type of Woman Competitiveness Training Program	3- Evaluate how the beneficiaries (i.e. Women in Northern Bosnian who got training from the WEN NGO) have developed their 'Quality of Life'.	4-How many women became 'job-creators' or got employed? 5-Number of beneficiary women that became self-sufficient after the empowerment programs? 6-Type of women that are really influenced by WEN programs 7-Type of WEN programs that created success stories.	3-More possibilities for turning WEN to a source for women and family stability as it work to evaluate the wealth of women assets from physical, natural, societal and not only financial point of view.

## Multi-Discipline Problem Observations

One of the conditions for using observation as a means of collecting data is vigilance, cognition, and mental perception. Therefore, observation is defined as a state of attention and mental readiness that the problem solver must enjoy when observing.

Having multidiscipline observations help to build concentration and full attention to the problem and phenomenon studied. Once a multi-disciplined observation is done, our cognition would enhance our ability to interpret what is observed. The multidiscipline observations help us also to overcome the perceptions built due to the connection between the individual's

sense of experience and the previous experience on the socio-economic issue under study. Thus this would enable us to recognize more the impact of the subject.

*Targeting the anatomy of a socio-economic problem help in differentiating the level of understanding of the function of the problem outcome and how its structure can be observed, categorised and then diagnosed.*

The problem solvers usually need to guess 'what can happen to a particular phenomenon' as a result of their inability to understand all the elements related to the situation under study. Therefore, the problem solver may construct 'mental perceptions' of the problem and then set hypotheses that explain what couldn't be understood by logical observations. Therefore, multidiscipline observations help to build up mental perception on the socio-economic issue and which leads to new mental formation. The new mental formation of the opportunities of the problem gives a clear picture of the problem solution and what can elements need to be explored more inside the problem to come with the best sustained outcome.

## ***Problem-solving Lab- Case THREE Fisheries Re-Development***

### **1- Summary of the Socio-economic Problem Story**

Every day, at 3 am, early morning, Ahmed and his son Yusuf go to the Fish central market to sell their products to the main distributors after a long day of fishing. The distributors start their bids on the boxes by 3:30 am and close just about 5:30 am. Behind this daily practice, there have been many problems that influenced the life of the Bahraini family, the marine life and reduced the quality of life of many stakeholders.

Bahrain which is a small island and one of the Gulf Cooperation Countries (GCC) has always been known for its differentiated marine life specially for the taste of its small fish and shrimps. However, in the last twenty years many challenges affected the marine life in the country due to population growth and the limited fisheries resources. The limitation of the water borders around Islands of Bahrain lead to practices as overfishing, smuggling of certain fish on-demand, pollution and have all influenced the consumer behaviour towards sea food as being the main part of their weekly meals. The problem increased with the increase of the landfill practices led by the government mainly that came in the name of drilling for oil and the development of projects, despite the availability of 'Fisheries and Marine Environment Law'.

In the last two decades, the government of Bahrain has always shown interest in continuously developing the legislation and laws that protect fish and marine wealth in this small kingdom. and implement projects and programs to develop resources for the provision of fish food and strengthen control and prevention of overfishing and support of fishermen, however again these laws couldn't be enforced enough to coop with the high demand from the consumers or the fishermen.

There have been many turbulent implementations of regulation regarding fishermen, their type of fishing tools, the way the seafood and marine products are marketed, the Marine and Sea Food related factories, the regulation for the export companies, the consumers demand inside and outside Bahrain.

As the country is losing one of its main source of food security, studies were done to give alternatives solutions to deal with deterioration in both fisheries supplies and also a countermeasure to the increase in sea food prices. The study recommended to increase the diversity of the country's fish and seafood stocks and reduce waste of available fishery resources. Also, the study recommended to control the continuous rising prices of fisheries products specially that the fish protein consumption reduced from 20kg to 15 kg per year per person.

The total 'fishing effort' taken to produce (1 million units) have doubled in the last 10 years. This is mainly due to the reduction in the marine products quantities that could be produced by the sea around Bahrain islands. This affected both the quality and quantity of fishing total catch, compared to the same efforts ten years ago. The most alarming fact is that the total catch during the previous years was very high and has exceeded the limit in many cases of marine life species. This has created a further risk and a bad future impact on the 'fish stock' in the country. The study showed also an increase in the wholesale price change (\$ / kg) for the five types of fish on-demand between March 2012 and March 2014.

A study by World Food Organization (F.A.O) showed that the social and economic life of the fishermen need to be improved. This study shown that there is no trade balance (exports and imports). The FAO study shows that there is a huge drop of local consumptions from about (19 kg per capita/year) for each citizen to only (4 kg per capita/year).

Another similar study shown a decline of accessibility to different fish types to the 'household per capita income' is dropping rapidly. In 13 Years (2000-2013). the consumption of fish per citizen reduced from 1.5 kg/month to 0.4 kg/month. i.e. The annual per capita share of fish decreased from 18.1 kg in 2000 to 4.4 kg per person in 2012 which is another alarming issue.

Although government has been subsidising for the fisheries sector over the last five years for an amount that surpassed US \$200 million, the consumers did not feel this support. This dissatisfaction is especially important with the disappearance of some favourite fish species and the depletion of different fish stocks. The local study showed that prices are 100% higher for some favourite fish. Approximately 30% of the consumers admitted the dependence and the consumption of low quality and taste of imported fish. Thus, one could say that Bahrain has transformed from a producer to a fish importer as far the local consumers. Yet, Fish exports in Bahrain are still very high!

Despite different efforts taken by the government observations on the data collected shown limited development in relevance to the rise in prices, noticeable increase in per capita share, continuous impact measurement, increase in citizen satisfaction. The main observation was about the Bahraini labour whom been leaving this job and been replaced by expatriates' foreign labour. This led the fish sector to be managed by foreign distributors who in turn have set predominant prices.

Taking the FAO report to reality, the government started new projects to improve the boats parking in different ports established around the kingdom. The government also started to take care more about the optimising the fish market and other marine life related shops. An acceleration program was established to ensure the return on the investment loans for the fisheries entrepreneurial projects and sea food restaurants. However, government didn't really manage to attract enough youth to these projects.

The market suffers from inconsistency in application of quality standards in the markets and shops and the proper occupational safety and environmental standards. 90% of fish and sea production is wasted without proper utilisation.

## **2- The Classical Solution to such Problem**

Besides a resource based solution, as adopting more fish farming projects, more small ports establishment, loans for fishery projects and the consumption per capita for fish products remained low; the classical solution could have been one or more of the following:

- Selective Fish farming for types on-demand or those that suffer seasonal shortages
- More prevention measures for hunting or fishing in the sea
- Applying control on Fisheries Brokers and Distributors
- Reduce the number of fishing boats
- Strict Application of Bahraini law of marine & fisheries
- Calling for support of the private investors on projects related to fish farming
- Limit the number of boats licensed to fish.

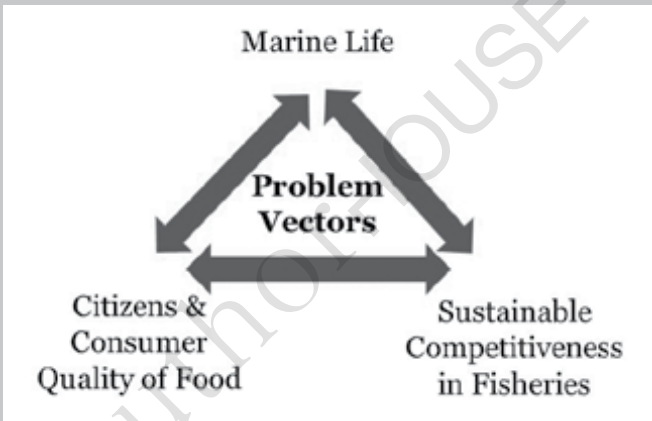
## **3- 3-The Inspiring Socio-Economic Solution**

### Understanding the Problem Vectors

Two exploration studies were launched in order to define the vectors of the problem. Study 1-studied the Fish Consumption in Bahrain from 1998 till 2004, Study 2-studied fish consumption in Bahrain till 2014. Comparison of the results of the two studies shown a pattern of fish consumption that is related to the chain of (Production till Consumption).

In order to appreciate the problem vectors and learn about fish marketing channels and fish prices in the country, a field visit followed by field surveys of the fisheries management in the five main fish markets in the country were studied. Figure (3-9) represent how marine life is concern of consumers for quality of food and sustainable competitiveness in being vectors for that compliment marine life to solve the Fisheries problems.

Figure (3-9) Problem Vectors of Fisheries Case Study



The problem vectors show that we can have great opportunities in improving the marine life around the island of Bahrain and create sustainable competitive environment for fisheries while also improving citizens and consumers' satisfaction about food security and quality through: Focusing on reduction of sources of waste in the fish resource, Manage and monitor the export of fish while setting awareness and guidance programs.

The total catch during the previous years of fish was very high and the risk of this rise shown a serious indicator of the future of fish stocks in relevance to the right of subsequent generations. The total catch during the previous years of shrimp was very high too and the risk of this rise is also very dangerous indicator of the future of seafood wealth.

A study carried out to compare the Bahraini vs. Global average production found that Bahraini production is very high compared to that of global models. Also, the study revealed that there is more export of Bahraini fish which comes from high risky production where illegal fishing tools are being used. This study has proven the fitness and importance of the 'problem vectors' during the synthesis of the socio-economic problem.

#### The solution Proposed

The following queries were set in order to exploit opportunities from the current Fisheries problem:

- a) Why is there an opposite relationship between fishing and production (i.e. the more the fishing, the lower the production)?
- b) Would reducing the fishing effort be appropriate to solve the problem?
- c) Does reducing fishing effort have a negative impact on the fishermen directly?
- d) What is the fishing factor that effects economically the social life of the Bahraini citizens?
- e) What is the role of the seamen, the mediator, the scourge, the seller and the citizens in managing this problem?
- f) Do we need to manage the consumers demand for particular species of fish?
- g) What is the effect of imported fish on local fish market?



### **Exploration Visits to explore Solution Opportunities**

Then exploration visits were done to: The Central Fish Market (wholesale market), Visit Sitra Fish Market (as a sample of Consumer Market), A factory of the production of fish (as a sample of export factories), Bandar Aldar Port (as a sample of Fishermen Collection points and their Community).

### **Establishing a Partnership Program with Friends of the Sea & Fisheries and Marine Environment Society**

The following programs started with the concerned NGO's in order to deliver a sustainable influence on the community practices towards an effective outcome:

- Exhibitions for maintaining fish quality and its positive health effects with an explanation of the socio-economic feasibility of preserving this fish quality.
- Proper methods of trading marine products.
- Establish awareness of the correct ways to identify fresh fish.
- Explain factors affecting the deterioration of fish quality.
- Guide consumers to the best ways to buy local fish
- Guide interested amateurs on the best practices in:

Buying Fish species / utilise the types of fishing gear / fishing methods / fish statistics / marine and coastal environment / marine reserves / dredging and landfill / mangroves / coral reefs / fish farming

- Identification of components of the marine environment and how to disseminate the correct resources.
- Helping students to gain awareness and national sense of the importance of fisheries resources and to preserve them and to relate them to the environment and to raise their awareness.
- Acquisition of information and knowledge related to fish farming

- Give students in Higher Education the opportunity to participate positively in solving the problems related to fish resources and the delivery of information and knowledge related to fisheries resources
- Measure the change the attitudes and behaviours of the citizens to the issue of marine environment.
- Marketing tourist attractions as fish farming, Fishery products, Fish investment.
- Training and Extension Program for Fishermen and Related Parties with Fisheries Resources.

### **Exploring the Opportunities in Total Fish Production Capacity vs. Fishing Efforts**

In order to explore the opportunities in this complex problem, the following data were collected to get effective observation. Fish production, marketing and sales channels inside and outside Bahrain, all were fields that have been traced and analysed. Accurate numbers of “total fishing capacity / effort” in the country were collected and codified according to types of fish stocks and type of Bahraini waters. The annual fishing export- and import-rates showed that more fish of local demand are exported.

### **Management of Marine & Fisheries Waste**

The focus on sustainable competitiveness in fisheries shown that there are large amounts of waste (estimated at one million tons annually). Therefore, the in order to eliminate the ‘Fish waste’ from fish production plants that focus turned towards the beginning of the production process. Products as Fish meat, Sophisticated eggs (roach), Heads, Bones, fins, Skin, Sheets and scales, Fish Air bag, Liver and Digestive System, all were utilised in order to enhance the recycling of fish wastes. Therefore, the marine waste was diverted to the farms to be used as natural fish fertilizers for the crops. The utilization of fish waste, opened new job opportunities as the financial investments in this area provided the country with good source for value-added economic production.

The quantity of utilised waste in marine crab products increased. This increased the Fisheries department marketing efforts for targeted investors in marine products or raw materials. The waste proven to be a source of buttons, bags, baby milk proteins, food products, fat, enzymes, Fish powder, Fish Oils, Raw materials for leather, glue Gum, pearl gum Glue for Vitamins preparations, human food and animal feed.

### **Youth Involvement with Marine Life & Fisheries Conservation**

In order to encourage local youth generation involvement in Fishery business, a clear path of incubators supported by the development banks and labour fund in the country were set. The profitability margin was calculated to show the youth how it fits for their entrepreneurship projects.

### **Plans for Sustainable Fish Production**

Plans for sustainable fish production were reviewed both as deployed strategies and realised outcome. The data were obtained directly from the Bahraini fishery resources to see the real control on the fishing effort/ fishing boat engaged in fishing activity on the Bahraini fishery resources.

The following Equipment was found to be used illegally:  
Large Cages / Small cages / Cruiser Cages of sea crabs / Cruisers

Shrimp Nets / Greyhound / Cruiser Nets Spinning nets / Spinning Nets / Cruiser Thread & Hooks / Thread and Hook / Long Thread Multi-Hooks / Long Thread multi-hooks.

### **Re-Storing Compliance to Best Practices**

Compliance to laws and regulations for the development of fishing, or practices which cause frequent damage and loss of fish wealth or lack of proper utilization of fish including overfishing, such as practices of: fishing at times of prevention, fishing larger quantities than allowed for each species, hunting small sizes and rare and endangered species, fishing in ways violating or prohibited such as fishing without permission and fishing using three-layer gill nets.

### **Improving Fishermen Conditions**

Living conditions of fishermen were improved through applying health and life insurance, besides unemployment (social insurance). Insurance on the fishing boats also now strictly followed. The Ministry of Trade in coordination with Fisheries Directorate started inspection on marine shops to control the high prices of fishing supplies.

### **Focused improvement for Local type of Fish on-demand**

A focus on creating a model on (Safi) Fish type led to the increase per capita of this fish again starting from 2015. The awareness campaign also helped to increase the awareness of fish industry professionals about the importance of preserving fish stocks and totally export it. The consumers were encouraged to come every Saturday to local Fishermen-Market where only the locals are allowed to sell which increased the public awareness of the fish types and products.

### **Prevention against Marine Life and Fisheries Pollution**

In order to enhance fish quality, all activities related to: Quality of fishery products, Marine safety, Marine navigation equipment, fishing equipment, Motor maintenance and Transport of fish products were shifted away from the sea to avoid marine pollution.

Fishermen were inspected more by the Marine Coast Guards who ensured that the Fishermen, even the amateurs one, are using more selective fishing methods and means for fishing using certain sizes and types of fish species, which help to avoid depletion of fish stocks.

### **Improving Fish Quality Delivered to Local Consumers**

In order to enhance the Food Quality for Bahraini Citizen (the third vector) in the problem solution, a regulating fisheries procedures and administrative mechanisms were introduced to control or mitigate the risk of Fish export. The Export days from twice a week to twice a month. A determined authorized quantities were set for each exporting company with clear identification of the types authorized for export, i.e. those types that of no demand to the local consumer. Authorized and registered exporters were identified. Inspection of authorized quantities and types were arranged in collaboration with Ministry of Industry and Trade, in coordination with the Fisheries Directorate.

### **New Holistic Designed Awareness Program**

In order to have a program where all the Fisheries processes would be integrated with the efforts of the main stakeholders the following programs and schemes were started in parallel time from 2010-2013.

- High School Students Field visits to ports / beaches / Fisheries and Marine Life Associations and clubs for the purpose of raising awareness and guidance, dissemination of information and education of preserving the coastal environment, marine environment and fishery resources.

- Use of Media plus Public lectures, seminars and training courses for workers in the field of fish resources and displaying pictures and instructional films for best practices of Legal Fishing.
- Holding lectures, seminars and training workshops for those interested in fish resources such as schools, environmental associations, civil society and others.
- Exhibitions and presentation of scientific images, films and live samples of the marine environment and fisheries resources conservation before 10 years and now (year 2013) in public shopping centres, etc. With children and youth drawing competitions and invitations for marine life visits.
- Students' field activities visit to fish farming plant were programed for both those in high school and higher education.
- Research Centre was established on the field of fishery resources with easy access to researchers on marine and fisheries statistics - marketing - quality - import and export - pollution - fish extension - fish classification - types of fishing - fish farming - investment in fish farming and others.
- Started trips for public participation in the maritime voyages for scientific expedition with a range of stakeholders interested in fisheries resources and the marine environment.

### **Program for Encouraging New Investors**

- A Program started for encouraging new investment in local fish on-demand farming.
- Investors were directed to find alternatives to fish other than traditional fishing in order to preserve the fish stocks and protect them from extinction

- To sponsor the exhibitions and awareness programs on fisheries resources and research related to enhancing fish wealth from production, marketing, import and export as well as scientific studies.
- Kiosks were open for the sale of fish products in the coasts, gardens, parks. The fish shops were opened near the beach to encourage care from the citizens about the marine life. The shops also showed exhibits of fish products in Bahrain and the best practices of using the proper nets, etc.
- Passed on the success of the new weekly local fish market which became a landmark for tourists and main hotel suppliers, the plan now to extend the days for this local fish market which have different style than the central market.

### **Outcome of Problem Solution**

The project clarified many strategic gaps that were turned to be opportunities for the kingdom of Bahrain. For example, it showed the importance of marine products recycling projects in coordination with all the fishery stakeholders and the municipalities.

The solution brings to the table clear eco projects as special plants for fish production. The solution also defines the role of other ministries as the Ministry of Education and Ministry of Health were that need to set plans to educate the citizens about the importance of eating fish and how it positively affects their health. The Ministry of Education also has a role in educating the students about the potential business in marine life and its importance to the country's future food security.

**The solution influenced the following stakeholders:**

Fishermen / fish transporters / fish vendors' / fish factories / fish exporters / importers / importers of fishing equipment / investors / clubs' / consumer audience / students / teachers / environmental and professional associations / clubs / social centres / Customs and Ports Affairs / Coast Guard Administration / University of Bahrain / Radio and Television / Public Health Department / Environmental and Vocational Associations / Ministry of Education Schools / Fish Companies and Factories / Importers of Fishing Equipment ☺

**Awareness and information plan for fisheries management**

Fishermen 's Council proposed fishing licence to be regulated by the parliament. The program targeted to raise the level of awareness and commitment among the fishermen about the laws and regulations concerning the organization of the fishing profession. Also, the licence meant to exploit the importance of seafood and the marine environment wealth in order to deal with it in the correct manner.

Under this proposed licence the fishermen could be warned not to follow the wrong practices, such as fishing in areas and seasons of fish breeding and poaching. The licence would ensure that by every renewal the fishermen would be educated in how to maintain the quality and methods of conservation and circulation of fishery products, so that the consumer would have fresh products without negatively affecting the economic income of the fishermen.



authorHOUSE®

# CH 4 – REALISE

## *Psychology of Problem-solving*

authorHOUSE®

## The Psychology of Re-Inventing Our Lives

The competitiveness of any problem-solving methodology literature has always been dependent on psychology. *The psychology of problem-solving is about thinking that depends on the behaviour directed toward attaining the solutions which are usually not readily available. Solving complex socio-economic problems requires a psychology that must understand the problem correctly to accurately use the cognitive activity in most suitable way.*

D’Zurilla and his team (1971) seen that we mostly deal cognitively with a problem, as problems are rooted by our mindsets. However, in reality, still today event happens, we usually choose to see only one side of the story, and then interpret the solution around it. Therefore, *we need behavioural modification when dealing with complex problems as through this modification we can create the suitable mindset that would be able to accept variety of alternative solutions and see the problems holistically, or the challenges from different perspectives.* Thus, how we perceive and think about a problem is more important than the problem itself, as how problems are stated and presented affects problem-solving to a great deal.

*Recent studies show that curiosity about problem-finding trigger inspirational thinking. Our mind and spirit are usually evoked by the excitement of this thinking to handle the challenges of the problem that needs to be solved.* Even the socio-economic problem is affected by this excitement. For example, if our mindset is controlled by convergent thinking where our attitude would be focused on finding a particular answer to a problem, the solution would be different from that of divergent thinking where our mindest would try to generate as many possible solutions to a problem as possible. Therefore, the solution to a problem is highly

related to the type of thinking and the attitude of the problem solver at specific condition.

*An 'incubation thinking period' is a period where the problem solver would be left for a time, allow the minds to unconsciously find the best solution, or to find the targeted insight.* Depending on the different approaches to problems solving, i.e. whether we use introverts and extroverts' approaches, affects the way our brains are stimulated. For example, for extroverts, their ability to take good detailed observation make their ability to tackle the problem and bring in suitable solutions would be faster, however not necessarily better solutions. Therefore, the introverts, might be more value-added in dealing with problems that need careful monitoring and long-term planning.

*As the brain visualise the solutions, it starts to generate mechanisms that are inherently predictive, i.e. bringing familiar solutions to the complex socio-economic problems thus leading to reinventing it.* This encourages the brain to propose solutions with totally new approaches. Visualizing the ways to get out of the mind blockage toward the ultimate solutions establish a technique known as "brain mining." It is a natural process where the mind naturally solves new problems through old solutions.

*Once we establish the detailed relationship between the 'social problem' and it 'economic factors' of the socio-economic issue this would mean that we have started to 'dissect' the problem anatomy.*

When we are faced with the challenges of complex problems, the human cognitive function raises our persistence to deal with the sudden changes. The complexity is pinned down to a specific part of the brain, which is the 'frontal-lobe'. This understanding of how the brain regions react, provides us the ability to learn how to explore the right approach that suites the challenge.

The psychology of moral thinking during problem solving is found to be highly intuitive and emotional. This thinking only appears after careful reasoning that follows the curiosity of investigation. The psychology of an experienced passionate problem solver would be focused in finding out when the changes happens suddenly, or when did it change gradually. Current studies of neurosciences, using FMRI, are trying to pin down brain signals during different problem solving stages.

More mental excitement happens when we face untangle problems. The pattern of brain waves would increase once the activity associated with dealing with the problem challenges starts. The parietal cortex, a region in the upper rear of the brain is stimulated when elective attention due to the exploitation of the problem opportunities occurs. The parietal cortex need to carefully integrate the information coming from all the senses which could increases the clues of high gamma rhythm patterns. Unless this careful selection is done the brain would not be able to restructure the problem properly.

People experience the “Aha moment!” when the Alpha brain rhythms are experienced. Here, the rhythms are associated with a relaxed mind which would help to manage the problems.

When tackling problem-solving the Anterior Cingulate Cortex (ACC), a region in the front of the brain tied would be stimulated. ACC would have an important role in decision making and conflict monitoring or giving accurate feedback. This feedback helps the ACC to detect errors during the problem-solving to point out the miscalculations as well as the success.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

## Brain Physiology and the Psychology of Problem-solving

Our brain is made of mainly two hemispheres that control vastly the different aspects of our thoughts and actions. Each of the brain hemispheres, the left and right brain, have a differentiated role in problem-solving. Each half has its own specialization and thus its own limitations and advantages. *The left brain follows a logical pattern and thus usually is objective rather than subjective.* Thus this side of the brain views the problem chronologically, to help define the true or false of the problem. It is the side that act like turning the focus on the trees rather than the whole forest. *The right brain helps to synthesis the problem where the intuitive hunches are followed. This side creates patterns, without following a step-by-step process.* The right brain uses subjective approaches rather than objective ones. Focus on the forest rather than the trees.

*There are identified brain regions which are associated with the problem-solving. Medial Frontal Cortex and Left Prefrontal Cortex are highly involved with mapping and analogical reasoning, while the Left Inferior Parietal Cortex helps in solving insight problems.*

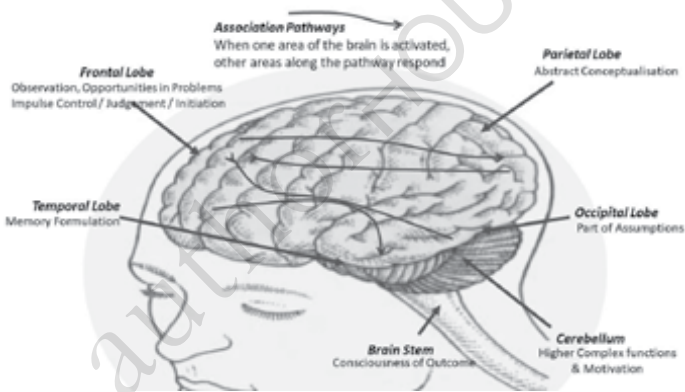
The Frontal Lobe, as shown in Figure (4-3) helps in problem-solving planning, reasoning and association. *The frontal lobe creates more attention on the problem opportunities and enhances the concentration on the possibilities of the potential solutions. The Pre-Frontal Cortex also have a major role in helping to improve our functions during the problem-solving journey, since it helps in improving the way in planning, thinking and management of expectations.*

The Temporal Lobe help in realising the problem through our sensory areas. While as Figure (4-1) shows, the Parietal Lobe

help in recognising the problem, physical content and sense of time and space. The Occipital Lobe help in collecting the visual observations.

Hence, while the brain Temporal Lobe help to formulate the problem, the Parietal Lobe help to abstract the problem conceptualisation. The Occipital Lobe help to develop the most suitable assumptions of the problem. While the cerebellum helps to enhance the capacity of the problem solver to deal with higher complex functions.

Figure (4-1) Association Pathways as the Brain is Stimulated through the Frontal Lobe.



## The Interaction of the Brain during the Problem-solving

The human brain has great capacity to interact with complex issues. *The more our brains are challenged, the more we would have the capacity to adapt with dynamic situations. This interaction*

*enhances our capabilities to separate between the different opportunities in the problem.*

*In certain socio-economic situations, a socio-economic problem is regarded as an unwelcomed, or a harmful condition that needs to be dealt with, or managed effectively; dissecting it effectively would ensure its proper elimination in the most efficient and effective way.*

*During the conscious attempts to solve a problem we would raise a powerful neuro-transmitter hormone in our body called oxytocin. Oxytocin is derived from the Greek words meaning “quick birth.” Having interaction with problems plus attaining them with passion create really a feeling of being born again. This is the scope of oxytocin in human social and emotional behaviours, which effects our individual and social traits.*

Oxytocin mediates social behaviour and may elicit positive or negative social emotions (Bartz et al., 2011).

In the hypothalamus, oxytocin is made in magnocellular neurosecretory cells and stored in Herring bodies at the axon terminals in the posterior pituitary. It is then released into the blood from the posterior lobe (neurohypophysis) of the pituitary gland.

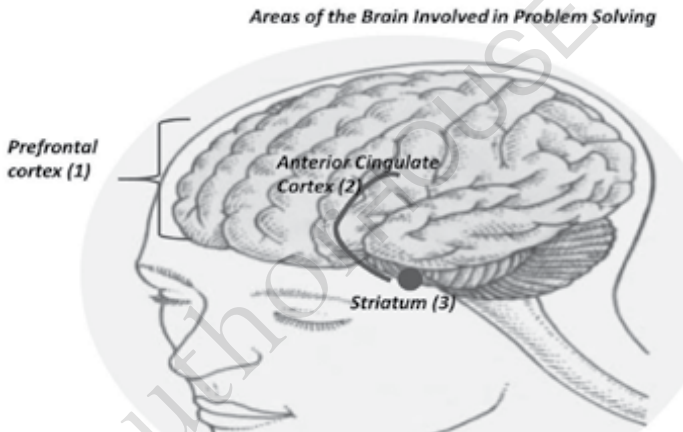
Under optimal circumstances, oxytocin increases trust and is associated with our social attachment to our communities' issues. While oxytocin production in humans was originally believed to increase only in response to direct physical contact. The extended period of nurturing facilitated by oxytocin, as well as its role in reproductive behaviour and physiologic functions, indicate its importance in human social and intellectual development. Recent research linking social behaviours to positive health outcomes and implicates oxytocin as a primary physiologic mechanism



(Carter, 2014; Leslie et al., 2010; Uchino, 2006; Kosfeld et al., 2005).

The striatum and the Anterior Cingulate in the inner core of the brain has three sections, and each one seems to work towards creating specific decisions in relevance to the problem intervened, which illustrate the role of hormone transmitters, as oxytocin, as shown in Figure (4-2).

Figure (4-2) Areas of the Brain Involved in Problem-solving



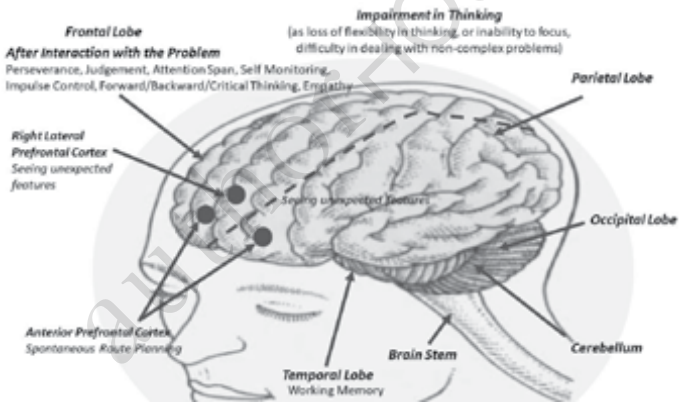
After interaction with the problem, the brain capacity would start to get differentiated as shown in Figure (4-3). The complexity of the problem would show the level of impairment in thinking, as loss of flexibility in thinking, or inability to focus on the problem opportunities, or even in the difficulty in dealing with the problem opportunities.

The Frontal-lobe, due to interaction with the problem, would create waves that trigger perseverance. Thus the Frontal-lobe would help to improve the problem solver judgements, with more

focused attention, better self-monitoring, more impulse control, more forward/backward/critical thinking. The collection of all these outcomes would help to establish feelings of empathy with the socio-economic problem.

Figure (4-3) shows also that the Right Lateral Prefrontal Cortex of the brain once it interacts with the problem complexity it starts to help the investigators to raise their curiosity towards seeing the unexpected features. *The Anterior Prefrontal Cortex helps also to build spontaneous route planning which help in the end to move the Temporal Lobe to utilise the working memory to deal with the frequent socio-economic challenges.*

Figure (4-3) The Brain Interaction with Complex Problems



Another area of the brain vital to problem-solving is the prefrontal cortex, located toward the front of the brain. For a long time, it was thought that some parts of the prefrontal cortex were only involved in simple thought, while others activated during complex problem-solving. However, recent studies have found that while we are doing routine tasks unrelated to the complex problem, the brain is still engaged with it.

*It is important to note that our past experience with problem-solving can lead us to mental fixation if we continue to use previously successful solutions, or solutions strategies without considering the differentiated conditions of each problem.*

## **The Problems Psychology and ‘Judgements’ Creation**

The goal of this chapter is to bridge the gap between the science of complex problem-solving of the community challenges and its practices, by understanding the psychology of intervention with socio-economic issues and its influence in enhancing our wellbeing. *Realising the psychology in dealing with problems bring us a diverse set of scientifically judgement potentials thus promote our mindfulness which lead to promoting our wellbeing.* Instead of primarily focussing on the question: “what is the problem of our community and how can this problem be solved?”, our psychology would shift with time to questioning “what does a valuable flourishing community life would look like and how can this level of life be achieved through solving the issue identified?” Clearly the first questions are not similar to the last ones. So, does their psychological consequences.

When we try a socio-economic problem in classical way we usually try to find weaknesses which are not the same as building strengths. When you try to find the opportunities, i.e. the strengths that the problem solution would bring to your community, you are actually psychologically moving closer to a desired direction that leads to unattainable, transcendent life purposefulness journey. *The more we have this focused life purposefulness, the more we get rid of fear of facing even our own life problems.* With such engagement level with socio-economic problems we can psychologically control our anger and many

possibilities of depression as we mentioned in *Case (10)* in Appendix (2). Therefore, *the psychological part is considered very important part of the socio-economic problem solving journey as it helps our mindset to have the capacity to make judgements and move closer and closer to a desired outcome.* This is what would make us more capable in re-inventing our lives; by being actively concerned in our community issues and the challenges around us.

*Based on 'behavioural mapping' of how the problem stakeholders would react or integrate with the socio-economic issue a plot of the 'spectrum of the problem solution' could be proposed.*

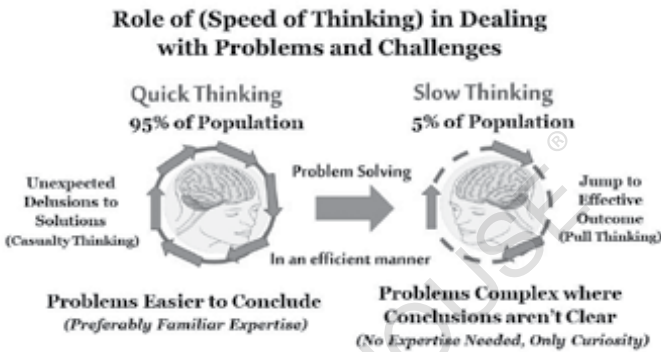
Creating judgement on the socio-economic problem comes from interaction with opportunities that help the mindset to build on it. *The need for judgement is very important when we deal with problem instabilities or with innovative wild ideas. In disrupted communities or complex cultural issues, the control of the speed of thinking becomes very important in order to be capable to deal with such problems and challenges.*

Studies show that 95% of the population have 'high speed of thinking' that limit their capability to only deal with the unexpected delusions to the solutions through the casualty thinking. However, these high speed thinkers usually also make only easy conclusions and produce types of judgements that are dependent on familiar problem expertise.

In case of the other 5% of the population, they would be those that are more capable of 'slow thinking'. This type of thinking capability can help the problem solver to deal with complex issues. The mind in this case would jump to visualise and create effective outcomes. With pull-thinking the mind would have selective curiosity towards complex conclusions. Figure (4-4)

shows the role of speed of thinking in dealing with complex problem conclusions.

Figure (4-4) Illustrates Speed of Thinking in Dealing with Complex Problem Conclusions.



## Psychology and Socio-Economic Problem Cost

Many expert problem solvers believe that if you don't define the cost of the problem, you don't have a problem with value. While access to accurate problem cost data is core to defining the problem affordability.

*'Lost opportunities' are another source of why we need to study the psychological cost of the problem, especially when the problem options cannot be explored. In order to minimise opportunities loss, we need to enhance the problem solver psychological engagement with the problem.* This could start with an effective communication model that would help the investigator to observe and then absorb the causes of the problems, the present viable solutions and what are the details problem diagnosis steps to be taken more.

*In certain complex socio-economic problems, we need to study the psychological significance and consequences of problems risks. i.e. called problem aspects and impacts, as these two factors influence the problem overall psychological cost. There are hidden problem costs that need to be included in the overall cost. For example, community dissatisfaction with the problem existence and its impacts have a very high negative cost.*

The problem cost is important as it helps to define the value of the socio-economic outcome and besides it creates the inspiration currency that would ensure effective decision making. Usually the higher the cost of the problem, the more the concerned stakeholders and decision makers would be eager to solve it faster. However, they would not necessarily come with permanent solutions.

## **Psychology and Cognitive Process of Reflection**

When performing observation as part of exploration of the problem, the frontal lobe neurons would start firing. That's why problem-solving is considered to be a cognitive process which depends on reflection. Through reflection we can make more problem opportunities inferences. These inferences help to generalize the problem and raise the belief in the capacity for effective outcome.

*The psychological analysis helps us in analysing thoughts and feelings during problem-solving. The psychological analysis also help us to reveal the 'hidden opportunities' which influence the behaviour development.*

Strac, et. al (2016) shows that cognitive functions can represent a spectrum of our mental abilities and our complex processes. Cognitive functions are very important for the problem solver as it is related to his attention, memory, judgment and evaluation

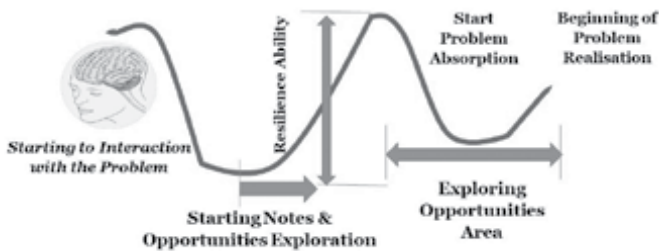
abilities. *The brain of a problem-solver would perform interpretations through analysis and synthesis which helps to create the final judgement.* This judgement would help to stimulate the habits of expectation and thus help to build what we perceive and think.

## Dealing with Long-term Problems and Challenges Journey

*Dealing with long-term problems requires navigating its intrinsic hidden features.* This requires that we start to interact with the problem through taking notes and observations to explore the opportunities inside it. *As we get psychologically engaged more and more with the problem we need to optimise our resilience ability to manage the problem complexity.* Once the opportunities of the problem are identified we can start problem absorption which help us to start realising the potential outcome for the problem and its type of requirement. Figure (4-5) represents the long-term problem journey till the being of problem realisation.

Figure (4-5) Illustration of Long-term Problem Journey and its required Actions.

### Dealing with Long-term Problems and Challenges Journey



## Distraction as a way for Problem-solving

Distraction is the greatest form of inspiration, because when we are distracted we are more prone to think outside of the problem. *Overcoming distraction or disruption can lead to an inspiration that leads into something real and tangible.* Many scientists create an intentional psychological obstacle for students to stimulate their ability to learn beyond the traditional environment.

Jack Penn said one of the secrets of life is to make stepping stones out of stumbling blocks. What prevents us from finding a solution is not distraction, but rather functional fixation. Therefore, we sometimes need to appreciate 'ill-structured problems', since in reality they have more probability for creating the suitable engagement for learners.

'Well-structured problems', on the other hand, are constrained problems with convergent solutions that engage the application of a limited number of rules and principles within well-defined parameters. Even though 'ill-structured problems' start with fuzziness and distraction, they possess multiple solutions, they allow less solution paths and carry fewer measureable parameters which make the problems are less manipulable. This create fuzziness that lead to uncertainty about the solution, or how to decide which solution is best.

Solving 'well-structured problems' based on information processing creates new learning. While solving 'ill-structured problems' triggers more cognition approaches that might bring total radical change and learning.

*Problem solvers usually would look for questions or matters involving doubt, uncertainty, or difficulty and/or a question for solution or discussion.*



## Problem-solving Under Uncertainty

*Problem-solving involves two steps that reduce the uncertainty. The first step to reducing the uncertainty is interpreting the problem and synthesising the opportunities that the problem brings. The second step in dealing with the uncertainty of the problem is to capitalise on the opportunities exploited from the challenges of the problem or its characteristics to come up with new learnings that solve the problem.*

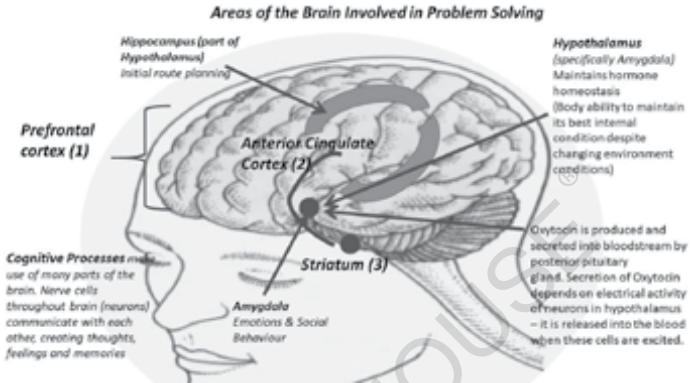
The brain helps to develop persistence which leads to better thinking and communication with clarity and precision. The mind manages the impulsivity and help to gather the problem data through listening with empathetic understanding, thus, guiding the process of creation, visualisation and innovation.

*The flexibility in the problem data collection increases our ability to respond to sudden shocks; helping us to taking responsible risks. This increases our accuracy to improve our interdependent thinking, humour, questioning and posing of problems.* Figure (4-8) shows that there are three cognitive steps that creates the total cognitive reaction with a complex problem. During problem solving the cognitive processes make use of brain nerve cells (neurons) which communicate with each other to create differentiated thoughts.

To establish more certainty, the cognitive process starts to stimulate the Prefrontal-Cortex, then the second Anterior-Cingulate Cortex and then Striatum. The hypothalamus (specifically Amygdala) helps to maintains the hormones homeostasis during the challenges of the problem-solving, as shown in Figure (4-6). This help to maintain the body internal condition, despite changing external environment conditions due to the dynamics of the problem challenges. The problem investigation excites the Oxytocin which is secreted into bloodstream, by posterior pituitary gland. This help to enhance the management of the

problem certainty where the electrical activity of the neurons would be regulated.

Figure (4-6) Areas of the Brain involved in Problem-solving



## Building Problem-solving Attitudes

Experience shows that the more we have people involved in socio-economic problems the more their mindsets would be opened to new learnings. This means newer attitudes would create models for socio-economic change.

*Creating a model make things realisable and tangible and help again in solving problems with evidence.* We call this model of reference as 'one-point lesson'. The models are the result of our reflections and they have important role in shaping our socio-economic ideas. Models help to highlight the opportunities inside the problem and how they can be used.

Solving socio-economic problems help to build capacities, values or eagerness to create a legacy of the life journey. Therefore,

socio-economic models help to create, spread and horizontally deploy the different possible achievements. The participant should feel that the successful models can be repeated and reflect on the development of the mindset used.

Targeting any socio-economic problem should create energy and excitement in any organisation as it involves higher level of end-customer-end, pull-thinking and passion in a way that enhances problem-solving by using observation. The problem investigator feel challenged and suddenly awakened to a realm of new possibilities. That momentary spark can give a new sense of purpose, and even help us reach self-actualisation. People value inspirational models since they learn from them and they, in turn, will help them build a better future in their targeted context.

Socio-economic problem-solving are used more and more today by leading global organisations, such as Google and Sony, to inspire the communities' attitude in dealing with future foresighted problems and challenges. One of the approaches these companies take is focusing on performance environment and ensuring it fosters exploration and growth. These leading companies know that the more the problem opportunities are codified, classified and stratified, the more they can tackle new level of unforeseen challenges.

## **Resembling State of 'Flow' for Socio-Economic 'Visualisation'**

The work of Mihaly Csikszentmihalyi in (1990) is very important for professional problem solvers, behavioural economist and opportunity exploration experts. Csikszentmihalyi presented to the world the *concept of 'Flow' which can be utilised to explain the*

state of the problem. Through 'Flow' the socio-economic problem investigator can reach the most accurate diagnosis of the identified issue. Thus "Flow" help us to get psychologically synchronised with the socio-economic issue to the extent that nothing else seems to matter. It is a stage that Csikszentmihalyi called in one of his TED talks as the 'alternative reality', since the experiential learning happens here is so exciting that it very hard to know when to stop the diagnosis efforts and start extracting the solutions from the opportunities retrieved.

*Since the problem solver would take care of the opportunities seen during the exploration journey. This requires changing the 'direction' of thinking continuously.*

Csikszentmihalyi (1990) described characteristics of optimal performance flow in which for the purpose of this Handbook we could refer to as 'Visualisation' that the experienced passionate socio-economic problem solver could use during the different stages of problem-solving. The first of these 'Flow' characteristics is focusing with high concentration on the task, i.e. diagnosing the problem effectively. This effective diagnosis helps to build more clarity of goals, which triggers a type of reward visualised in the mind. The work of Csikszentmihalyi makes us appreciate our 'intrinsic powers' and its capacity to influence socio-economic without external resources.

Figure (4-7) show how we can experience 'Visualising' a socio-economic problem solution that would lead to legacy and success stories. The figure set the relation between using 'Intrinsic Capacities' of the problem solver vs. managing the 'Challenges' during socio-economic problem investigation in order to reach the state of 'Visualisation'.

Figure (4-7) Reaching Visualisation Psychological State as part of Problem-solving journey

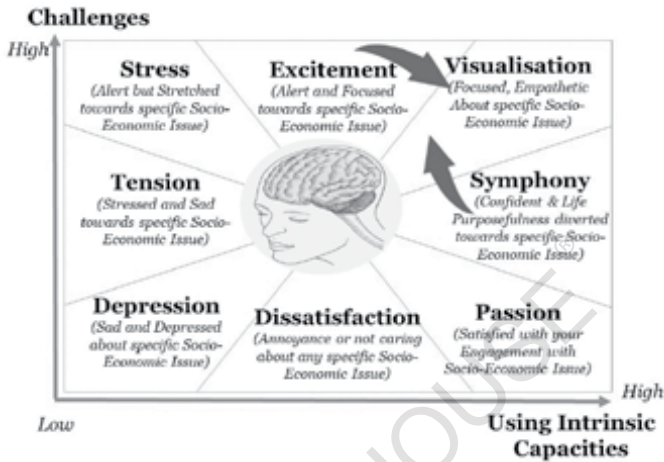


Figure (4-7) shows the two different ways that would lead to the 'Visualisation' state, where we would be in focus and totally think empathetically about the specific socio-economic outcome. First, through having the problem investigator being alert and focused towards specific socio-economic issue in a state called 'Excitement'. Alternatively, through a 'Symphony' state where the problem solver would be confident and have clear life-purposefulness diverted towards specific socio-economic issues.

In order to reach the key states that lead us toward 'Visualisation', both the 'Excitement' and the 'Symphony' states need either to use a type of socio-economic alert that make the problem investigator stretched with positive 'Stress' state, or create a state of engagement called 'Passion'. In the formula of management of psychological change, one can use also the states of 'Tension', 'Depression' and 'Dissatisfaction', as illustrated in Figure (4-7) to create a niche or early involvement of both the problem

investigator and socio-economic issue stakeholders. Once the problem investigator reach near the state of 'Visualisation' we can notice a spirit that triggers high interest in life, persistence, as well as the occurrence of low self-centeredness mindset.

## **Psychology of Visualising Socio-Economic Outcome**

Visualising the socio-economic outcome emphasise the importance of tolerance between the relationship of 'capacity vs. demand', where the intrinsic powers shown in Figure (4-8) are the capacity, while the challenges are the demands for the ability to deliver the best socio-economic outcome with minimal resources.

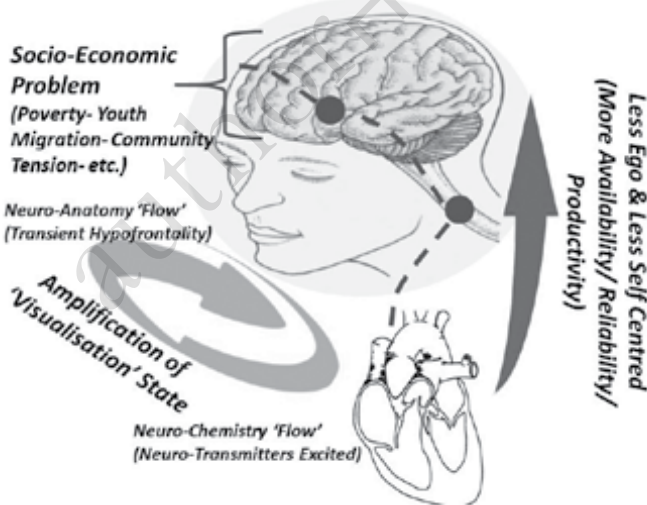
When the problem solver reach near the state of 'alternative reality', i.e. able to 'live the belief of what is visualised', a unique right feeling with deep satisfaction is reached. The state of belief helps the focus and persistence of the problem solver to elevate. Once we maintain a state of visualisation the problem solver would have the capacity to match challenges through the ability to see the 'big picture' of the outcome targeted. This psychological state of being able to see the 'big picture' help to deliver better concentration. When in the flow state, the brain would be actively seeking out information from multiple sources to engage deeper in problem-solving activities.

When the problem solver becomes psychologically fully engaged and immersed into the socio-economic issue, then his/her empathetic thinking would start to see the opportunities hidden in the problem. Once the visualisation insights start to flow and sudden intense feeling suspend temporarily, the feelings of fear from failure get eliminated.

*Addressing the expected requirements through a problem-solving team help to reduce errors in communication or delivery.*

Figure (4-8) shows how the engagement of socio-economic problems as issues of poverty, or youth migration, or community intolerance, etc. create a Neuro-Anatomy, called also (Transient Hypofrontality) which create messages between the brain and heart. These messages with amplification of visualisation state leads to a Neuro-Chemistry that originates Neuro-Transmitters as Oxytocin that create excitement with less ego that lead to humbleness, focus, more availability, reliability and selective productivity, called 'pull thinking'.

Figure (4-8) Amplification of Visualisation State and its Influence on the Brain and the Heart



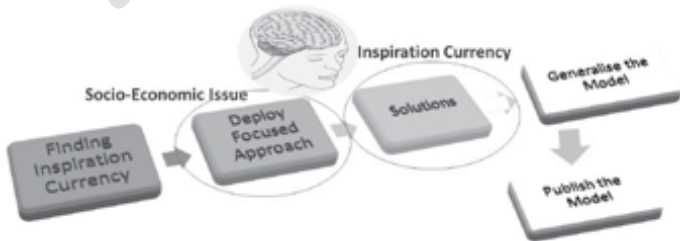
Visualisation is therefore both a physical practice and a psychological feeling that enhances our well-being. The

neurochemistry and social flow concentrations of plasma of oxytocin and adrenocorticotrophic hormone (ACTH) increases as we reach effective practice visualisation.

## Role of Socio-Economic Problem-solving in Productivity

*Problem-solving found to affect the productivity at organisational, community and even at national levels. Problems bring important productivity factors as what, why, how, opportunities and benefits, besides barriers and trends. Problem-solving affect the level of learning and the well for innovation which helps in deploying focused approaches and enhance the entrepreneurial spirit and activities. This in turn help to generalize the socio-economic model that the solution brings with limited resources, Tsaosuides (2015). Figure (4-9) illustrates the psychology of the socio-economic solutions finding and how it moves the productivity that influence the model solution till it is generalised and published as a success story.*

Figure (4-9) Illustrates Psychology of Solutions for Improving Socio-Economic Productivity Issues





*Solving socio-economic problems with the intention to improving productivity at the national level leads to a higher standards of living. This intention also enhances the society collaborative international competitiveness since it leads to better its 'Quality of Life' and its capacity to meet the demands which help to create legacy.* However, there are most of the time psychological barriers for creating better productivity while tackling complex socio-economic issues. One of these early barriers is the attempt of the problem solver to search for one 'right' answer, or to look for logical solutions.

Studies on socio-economic problem solvers have shown that their visualisation and 'sense of existence' are what differentiate them towards creating unique outcomes. The other unique character about these problem solvers is that their productivity capacity is highly related to their desire to fulfilling their wellbeing while attaining to solve the problem.

One of the ways the problem solver differentiate his/her productivity is by being selective in which socio-economic issues to tackle and in which to spend more time and resources on. This type of thinking is called 'pull thinking', and it is opposite of 'push thinking' where one could work on any problem regardless of its importance to or risk on the community.

The 'pull thinking' not only makes the problem solver select what problem to tackle, but even when and how to tackle it. This 'pull' capacity can be achieved by doing a type of 'feasibility analysis' of seeing what are the options available and can be retrieved. Then a 'benefit analysis' could be followed in order for the problem solver to ensure that the chosen socio-economic option satisfy the 'requirements of acceptability' to such issue in the society. For example, in *Case (7)* in Appendix (2), for speeding the turnover ratio on the emergency bed on the hospital, the 'feasibility analysis' would be carried out to see the level of acceptance by

the different medical staff, the patients and the patients' families for such proposed solution. Then a 'benefits analysis' would be done to show how much 'emergency patients' who are waiting in the accident would be relieved to get accessibility to proper medical care.

*The problem solvers could communicate their exploration through a variety of solution paths. These communication paths can be through sharing reflections after collecting observations, codifications of the problem, gamifications mechanisms and other challenges that can raise curiosity. This curiosity should help problem solvers and their communities to develop strategies that can be applied through different collaborations.*

The 'benefits analysis' would include the 'return on capital employed' as a result of this socio-economic solution proposed and how it is going to change the outcome on healthcare delivery. After such a project is implemented we can start to measure the 'benefit analysis', including the amount of lives saved due to provision of the proper emergency care in the right time, the reduction of cost, the improvement of healing, the reduction of cross-infection, the improvement of the medical staff collaboration and most all the maintenance or the development of patients' satisfaction of the services.

## **Psychology of Solving Problems with Minimal Resources**

One of the challenges of today that face many communities is procrastination of many problems due to limitation of resources. *Psychologically most of the problem solvers within communities, especially those working in governments, became so dependent on the resources that they can't believe that a solution for a problem can be extracted with no or minimal resources.*

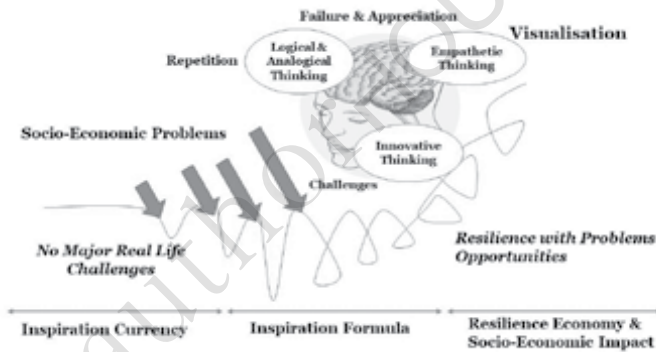
In order to show the possibility of solving complex socio-economic issues with minimal resources the reader is requested to review the ten case studies mentioned at the end of each chapter in this handbook. However, for illustration let us review a small *Case (37)* in Appendix (2) which was carried by the researcher on a dormitory school in the city of Cazin, in Bosnia. Thirty students with learning difficulties, both boys and girls, were given a workshop about how to solve problems and find opportunities in a way that would differentiate their villages. They all were challenged then to start-up a small socio-economic project with a budget of less than US \$150. 14% of these students were above 18 years, the rest were between the age 14 to 18 years old only. Twenty out of these thirty students felt that their attempts to get involved in their community problems have managed to change the perception of their families and people in their society about them. 56% of these students said they now have a goal in their life, or they now believe that they can work on one their goals. However, only 30% of them knew what inspires them. However, 65% believed that they think now that they can participate in changing their status.

90% of the students participated in this project believe that now they now have good information and ideas that can change their life. After taking further training, 90% of this students group believed they have started doing things that are important to their future. Actually, even 70% of the students involved in the projects believed that they now can change how people look at role of youth in the society. Finally, 30% of these students believe now that they are more persistent to achieve their goals and that if they fail they would get up again and again.

This case study shows that involving people in their community's problems but limiting them with resources can help to enhance their attitudes and differentiate their contribution. *The critical*

thinking develops a method of acting and the ability to associate things from different disciplines. This develop a 'spirit of inquiry' that help us to consistently renew our view of the world, re-define key inputs for improving decision making and make us more resilient to accept what we are questioned or challenged to do. Figure (4-10) shows how socio-economic problems and challenges thinking leads to exploring the problem opportunities; while in the same time enhances our capacity for benefiting from the repeated attempts. This develop our visualisation capacity and enhances our resilience towards finding more problem opportunities again.

Figure (4-10) Illustrate How Problem-solving Thinking is triggered



## Happiness and Socio-Economic Problem-solving

The frequent reflection in problem-solving help to establish a mindset that is almost always excited. The mindset is even more excited based on outcomes. This excitement frequency is guaranteed by the frequency of problem attempts that cause better 'brain elasticity'. The higher the elasticity of the brain, the more sense of

happiness, replacing the human desires for pleasure and resulting in different outcomes. The excitement of exploring for solution make the Neuro Transmitter Chemicals (NTC) communicate through one neuron cell and another as if they are firing each other.

With more frequency of problem-solving attempts, the brain would shift from firing up the neurons by Dopamine Excitatory towards firing up using Serotonin Inhibitory. The Serotonin slows the neurons (de-regulate the high excitement and hence tend to maintain the neurons life). This chemistry that is caused by more attempts of problem-solving would lead to a mindset that targets facts driven by truth and strong beliefs. This sense of happiness can't be sustainably achieved by substances, it can only be taken by actions of persistence and perseverance which the problem-solving can bring. This ethereal experience brings in unique insights that create sustained feelings of happiness and empathetic reactions that enhance our visualised reflections while frequently trying to solve the socio-economic issue. This process is reflected in Table (4-1) which compares practices of solving socio-economic problems with and without resources.

Table (4-1) Represent the Differentiation that Frequent Problem-solving Attempts Creates towards Happiness

<b>Problem-solving Basis vs. Type of Outcome</b>	<b>Resource Based Problem-solving</b>	<b>(Non-Resource Dependent) Inspiration Based Economy Practices</b>
Type of Outcome	Pleasure Oriented	Happiness Oriented
Type of Neuro Transmitter Chemicals	<i>Dopamine (Excitatory)</i> i.e. Fires-up the neurons (if it is excited, however it dies too quickly)	<i>Serotonin (Inhibitory)</i> Slows the neurons (de-regulate the high excitement and hence tend to maintain neurons life)

Type of Activity	Control the Serotonin (the more pleasure you seek the more unhappy you get).	Can be led only by truth and strong beliefs
Length of Influence	Short lived	Long lived
Way of Initiation	Given (can be achieved with substances or resources)	Taken (can't be achieved with substances)
Type of Experience	Visceral (feelings and reactions rather than reasons or thoughts)	Ethereal (delicate light experience)
Type of Social Requirements	Can be experienced alone	Can be experienced in Social Groups
Final Outcome	Means to pleasure might lead to addiction	Means to happiness leads successful life balance

## **Understanding Thinking Styles in Problem-solving**

Generally, most of problem solvers would tend to solve problems based on their own thinking preferences which can help them reach a level of 'problem understanding' and then 'problem realising'. Problem understanding makes the mind lazy, while problem realising make us more persistent to visualise the outcome of the issue under investigation. However, coming to the level of problem realising stage is sometimes very challenging, as some problems need different styles of thinking than ours. Actually, in many complex socio-economic problems we need more to reach problem realisation, which requires 'holistic

thinking'. This means we need to utilise more than one thinking style to deal with socio-economic problems. For example, to tackle chronic poverty issue in migrant community, mentioned in *Case (47)* in Appendix (2), you need to diagnose using both logical and interpersonal emotional thinking and then synthesis the problem based on holistic thinking. Once we start exploring for opportunities that the problem bring we could use more facts-based, organised, integrated and outcome-based solution.

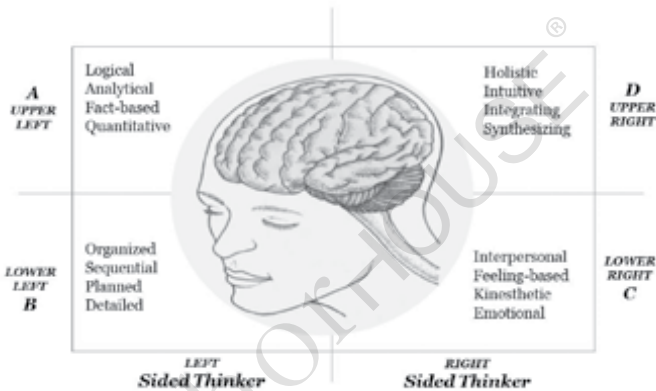
Hence, it is very important that we understand the types and styles of thinking during the process of problem-solving which could help us use the right type in the right time of the problem realisation process. In order to ease this, we will use the 'Herrman Whole Brain Model'. The Whole Brain Model explains new ways of thinking that are needed for specific socio-economic problems that may not occur to us at the moment of exploring for opportunities. Thus the problem solver can use Herrman Model to understand how socio-economic issues and the problem-solving process would be affected by the thinking preferences.

Once the problem solver starts exploring the different perspectives of the problem solutions outcome, various techniques to improve the different thinking preferences would be utilised. *Some problem solvers use team-work problem-solving to enhance their perspectives and overcome their dominating thinking style.* This was found to increase the socio-economic issue possible solutions and the opportunities that can be exploited.

In order to ensure the holistic perspective thinking, the problem solver is advised to recognize the general characteristics of each type of thinking quadrants shown in Figure (4-11) in order to realise how these quadrants leverage contrasting thinking preferences. This recognition of thinking preferences and non-preferences would help the problem solver to understand what

to communicate about and how to communicate with problem constructs and stakeholders. Then, one could see what is the impact of this communication on the problem solution outcome. In summary, *the problem solver need to understand the four languages of the brain thinking in order to optimise the holistic thinking while exploring for socio-economic solution opportunities.*

Figure (4-11) Problem Solvers Thinking Styles



Once the communication cycle of the problem solver starts with diagnosis and observation using a language purely from our most preferred thinking quadrant, one should start to be independent from his/her preferred thinking style quadrant. Sometimes we would need to create a team that would ensure diverse thinking style that is resilient and capable to extract solutions and generate ideas. The greater the diversity of thinking from the individual problem solver or the team, the better we can generate a response to a problem or an opportunity.

As shown in Figure (4-11) the A and B quadrants, uses the upper and the lower part of the left side of brain. They are known to be more logical and realistic. In the meanwhile, both C and



D quadrants, uses the upper and the lower right side and are considered to be more interpersonal, emotional, yet integrative and holistic types of thinking. Quadrant A thinking style help the problem solver to argue rationally and thus generalizing the specifics while solving the problem logically. In this A quadrant, one would expect the problem solver to use critical analysis and solve problems after gathering the detailed facts. In this quadrant, the problem solver would try to make things work with rationality without being motional and considering the financial aspects.

*There are many sources for socio-economic problems as the challenges in dealing with 'outcome unpredictability', or 'community negligence', or specific 'consumer demands' that bring in 'health and safety risks', or 'threat to survival', or 'socio-economic deterioration', or 'threat to quality of life', etc.*

In quadrant B thinking style the problem solver would tend to focus on the 'how to' of the problem-solving. For example, here we might see that the problem solver(s) hold series of meetings to discuss more facts, figures and try to see the big picture, or answer questions openly in a way to start dealing with future needs. Here, the problem solver would have more capability to making plans and taking risks, or organising information, or focusing on overlooked details, or considering steps to be completed.

Both types A and B are known to approach problems practically and try to maintain consistency in the amount and the quality of the data collected. Both A and B also might have detailed plans and try to execute one thing at a time, since they are mostly disciplined and reliable.

Type A and B thinkers expect an organized consistent approach to extract out a problem solution and to stay on track. This type of thinkers would try to evaluate the solutions and generalise the outcome. However, these type of thinkers need clear instructions

and expectations. They usually also struggle with risk, ambiguity, unclear expectations and directions due to being more of traditional, conservative thinkers that see problems as threat for safety and stability. A and B problem solvers usually are poor with managing turbulent change that are expected during the process of solving socio-economic issues. Thus, A and B problem solvers like order and work best in problems where authority and resources are available. Quadrant B problem solvers strictly follows the rules and usually are not keen in getting new ideas out of a problem.

Type A would usually focus on problem-solving through understanding more (What) is the essence of the problem. Thus, these type of explorers would try first to find the facts that get them across to the problem economy and organisational requirement. Type A problem solvers are considered to be very precise thinkers, i.e. they look for facts that lead them to the solution point through logical and rational thinking. They usually like to find a proof of validity before experiencing by trial and error. They follow strictly the textbook of quantifying the data of the problems and usually depend more on subject matter experts in tackling a special socio-economic issue. These type of problem solvers are also known for searching pure facts and for being brief, clear and precise when they do their critical analysis. They usually focus on technical perspectives and would try to examine things critically. This Type A thinker usually are very serious about extracting solutions and would usually try to get down to the details in most efficient and cost-effective way. This type would usually work toward quantifiable outcomes, using critical analysis thinking, based on facts purely. Such problem solvers would focus on what types of tools and techniques to be used and what are the resources needed rather than on the opportunities of the problem or the outcome of the solution? In many complex socio-economic issues, this type of problem

solvers would call in an expert, believing that they can analyse the problems more in depth.

B type problem solvers would focus first on when the socio-economic problem started? How can the community cope with this issue? Then would ensure if all the details are available. Type B like to go through the problem details. They are a type of problem solvers that follow the rule thoroughly. They would usually be capable to overcome the problem complexity with team holistic thinking approach.

Type B problem solvers would usually focus on moving toward solution outcome through building a type of story closure. The mind of the problem solver here would be focused on how to make the effective story closure. Thus the problem solver here would try to manage the tasks allocation, along with organization planning and accountability. The problem solver here would focus on what are the processes or structures that need to be used along with the action steps for opportunities exploration.

Type C and D thinking problem solvers are open minded and would usually take initiatives. Both are flexible thinking styles, however quadrant D is more holistic thinking problem solvers, risk oriented, adventurous, initiative and entrepreneurial in their problem-solving approaches. Therefore, the D type problem solvers would be more of curious minds that look for effective solutions to chronic problems. Such mind curiosity would lead them as a problem solver to ask about any potential opportunities and dare to break the fear of trying it by asking 'why not?' and then dare to think next 'what if?'

*Each problem has constructs that influence its vector and its results thus shaping its differentiated story.*

Type C thinking problem solvers usually need to understand the impact they have on the profitability of a business. These type of people usually listen to their own intuition while getting emotionally engaged. They are a type of problem solvers that highly consider their own values/feelings while attempting to solve the problem and try to persuade the stakeholders to get more involved in exploring the solution. Some of C thinking type problem solvers prefer unstructured approach to group dynamics using empathetic spiritual thinking. The C problem solvers would tend to use their hands during exploration and would try to involve all their senses. They are a type that struggles with too much data and analysis. These type of problem solvers use usually words that reflect their feelings, but might be humorous and like to test things and feel the touch while considering an opportunity. These type of problem solvers would ask themselves about what their intuition tell them and would be influenced when setting their final story with other people perspectives. The problem solver would look here at who would like to collaborate in creating the outcome of this solution.

The C type problem solvers would query who else is affected by the socio-economic issue under investigation? These type of problem solvers would focus on personal touch, expression, empathy and would have consideration for feelings and values, therefore would be very keen to explain or analyse the problem as stories and examples. The type C problem solvers are known also for their capacity to mediate and facilitate the concerned stakeholders towards best possible outcome. They usually are good in sharing, listening and expressing the possible opportunities inside each problem. These type of problem solvers use intuitive sensing to solve the problem effectively.

Type D thinkers which use the upper right side of the brain and of Herrman model are also known to take immediate action

without any procrastinates and endure that they complete the visualised tasks due to their interest in fulfilling their novelty. Even though D problem solvers think in innovative way, many times they would come with breakthrough solutions that come from unstructured and unplanned ways. The problem solvers here focus on the main points of the problem while dealing with the future. However, D type of problem solvers known to get excited about the exploring the solution for the socio-economic problem, thus sometimes they become impatient about it. Such type of problem solvers would ask why does the socio-economic issue under study is affecting other solutions opportunities and how it is important for the big picture of the total problem solution.

The mind of type D can be described to be design-oriented. This type of mind is usually curious and adventurous. They look always for originality in their solution and try to fulfil their imagination about the problem solution. The uniqueness of type D problem solvers therefore would be their persistence in generating lots of 'disruptive ideas' while looking for new perspectives. These ideas come from their capacity to overcome the socio-economic obstacles, or rules built in the problem. This come from perseverance to explore the opportunities inside the problem while looking at the 'big picture'.

The type D problem solvers would have the ability to visualise the big picture using metaphors, integrating ideas and concepts. However, the competitive edge of type D comes from their capacity to envision and link the future with socio-economic variabilities, and the new foresighted possibilities in the problem under study. The main unique question of type D problem solvers would be about asking what are the main linkages for the socio-economic issue under study?

The type D thinking problem solvers would use surprising approaches that pictures metaphors in order to establish content discovery plan. They have the capacity of quick pace exploration using variety in approaches. Even though they are unique in opportunities experimentation and in linking new ideas and concepts, they usually struggle with time management deadlines and administrative details. They try to break the chains of systems that lacks flexibility while trying to solve the socio-economic problem. They are a type of problem solvers that bring in very imaginative yet integrative solution of possibilities that enhance the independence of the socio-economic model proposed. D problem solvers would focus on how will they get the maximum outcome from the proposed solution. They are a type of problem solvers that would challenge the status quo, being highly risk taking and experimentation driven investigators.

## **Abundance Thinking in Problem-solving**

Before jumping right into solving a problem, we should step back and invest time and effort to improve our awareness, understanding and realisation of the nature of the problem. This can be achieved through an abundant thinking mindset.

The way we define a problem is considered the focal point of any abundant-based problem-solving efforts. Therefore, it makes sense to devote more attention to problem definition. With *abundance thinking* the problem solver become *psychologically so eager* to come up with the most suitable solutions regardless of resources availability.

Using abundant thinking while tackling socio-economic problems help to build confidence and establish many possibilities of utilising, transforming from scarcity towards abundance

thinking helps to overcome many socio-economic fields including economics, sociology, management, sustainability, philosophy and organisational behaviours. Through these fields many opportunities and the large number of possibilities, or solutions can be derived from the abundant mind. The number of possibilities of the problem are infinite once we realise the type of relations that can be built with abundant resources. For example, the abundance in resources of the society police may lead to more proactive society collaborative solutions and initiatives, while the abundance of resident physicians would lead to better management of patients protocols or patients discharge. In the same concept, we see that the abundance of waste water would lead to better agriculture eco-entrepreneurship programs, and so on.

*It is very important to define and gradually tackle the mental model of the problem. For example, defining the mental model of a socio-economic issue lead to infinite opportunities towards different outcome solutions. For example, defining 'justice' as a mental model for healthcare services would help to see opportunities for improvement in 'emergency patients' admission' as per the criticality of the case, or seeing different possibilities for 'patient discharge' or 'hospital bed management' from different perspectives due to the changes of mindset that the mental model has suggested.*

Hence, if the mental model is about 'natural resources conservation', the issue of 'water scarcity' would be tackled by seeing the problem of water leakage in the system as a very important socio-economic issue, as listed in *Case (5)* in Appendix (2). Opportunities for such problem might be holistic where the natural resources would be seen on how it is produced, delivered and consumed. Instead of focusing on the production and consumption, the mental would help us to focus on the delivery,

where most of the fresh water is lost. This type of focused, selective thinking would lead to more abundant opportunities.

*'Questioning of assumptions' which would help on the 'precise definition or redefinition of the problem'.*

*With every problem-solving cycle we are actually breaking down the mindset of scarcity by showing abundant opportunities that can be achieved without extra resources, even under very challenging situations.* This should break-down the basic human fear of not having enough resources to survive or reproduce. This type of problem-solving depends on *inspiration cycles* where the individual assumptions or perspectives could help to re-label many things around the problem.

Another source for abundant thinking is what we call '*reverse thinking*'. So, instead of increasing the number of schools per head of population, we might think of using longer school hours per population head. For example, in many countries in the world, the same classroom is used by 2 to 4 groups per day at different times from morning until evening. By doing this, we would increase the quality of delivery, enhance the utilisation of resources, decrease unnecessary rush and maybe reduce pollution in the country and enhance accountability among students.

Hence, *abundant thinking depends greatly on how we perceive life issues and problems from where our focus is originally driven. Thus, if we start pulling the thread from where the problem focus would start, we will begin to unlock the secret of socio-economic problem-solving and its power.*

As we manage to engineer our abundant thinking we would really help our organisations and communities to be a source of inspiration and sharing knowledge relevant to problem-finding.



An abundant thinker would be unique in observation. The abundant practices help to build more self-confidence and create a more humble mindset for tackling more complex problem.

*Effective problem-solving needs a well-structured problem with clear paths to solutions, while if the road has an ill-structured problem this means it doesn't have clear paths to solutions.*

## Importance of Curiosity in Problem-solving

Perhaps the most important attitude is curiosity. Curiosity is very important *state of active interest* to knowing about an issue which allows us to *explore any issue through unfamiliar ways*. Through curiosity, the problem solver can experience *greater opportunity to discovery* unique sustainable solutions.

*Due to the curiosity of the problem solvers they would be always proactive in setting and achieving goals. However, this curiosity requires patience and calmness, when tackling socio-economic problems, where capacity for rational and irrational decisions are needed.* For example, in the *Case (6)* for the curiosity of controlling the rapid increase of the Non-Communicable Diseases (NCDs) risk cases, but with totally disruptive way that is less resource dependent raised the commitment of all healthcare workers to participate in discovering risk factors of those with NCDs potential.

Renowned psychology professor George Loewenstein proposed that curiosity is not only a mental state but also an emotion that pushes us until we complete gaps in our knowledge. This is what happened for example in the *Case (5)* of water network leakage detection project. The project team didn't settle for just finding the visible and non-visible leakage sources, but also innovated in

their field by developing techniques for better water piping as per the area requirements.

Directing our curiosity towards exploring the problem constructs requires careful empathetic listening and understanding. Such consistent practice develops our *flexible thinking* and enhance our perspectives. Figure (A-3-1) in Appendix (3) can be used as a reference to help enhancing the curiosity that empathetic thinking would initiate.

More curiosity helps to find *presence of meaning, search for meaning and life satisfaction*. Why? The life of a curious person is far from boring. There are always new ideas and new worlds to explore, which open up possibilities that are not normally visible. This fact itself was used for solving the problem of the rapid increase of 'diseased anxiety', which was leading to suicide, as in *Case (10)* and even in sub-case (4) of *Case (6)* in Appendix (2).

*Curiosity about problem-solving raise our conscious and improve the way we think or reflect. Maintaining the curiosity during the problem-solving journey helps in finding faults or potential opportunities which raises our metacognition.* Learning from the mistakes experienced during the exploration journey is vital to the total outcome of the solution. Most of the cases in Appendix (2) improved their outcomes by learning from mistakes.

Curiosity is the *perfect countermeasure* to overcoming socio-economic problem fear. However, we need to manage our curiosity for a problem by *learning to focus on the positives* of any situation. By being optimistic and approaching every experience with the intention to gain something positive from it, we'll probably find that many of our socio-economic issues could be solved in more simplified ways.

Curiosity is making the choice to look deeper into the socio-economic issue and seeing the *problem true significance*. With curiosity the mind can sustain the *realisation of the problem opportunities*. Studies have shown that brain can be active and alert when it is curiously *engaged with a complex problem*. Regular engagement with socio-economic issues and trying to *synthesis a problem mystery* helps to build a novel experience that get non-familiar outcomes and better *preserve the mental focus* on the final targeted outcome. Therefore, with curiosity the muscle of the mind becomes stronger while fulfilling *life experience* and creating *new learning*.

Curious problem solvers would have open mind to *new possibilities, ideas* and *sparking interest* to explore more opportunities. When managing to gather data using most of the senses we can start to shift from being aware about the problem to the stage of absorbing its potential. DiSalvo (2018) seen that such practices help to engage our brains to stay busy with problem-solving, and thus be an *effective buffer against anxiety*. Through maintaining curiosity on the socio-economic problem more *focus capacity* can be achieved, which means there are *less lost opportunities*. This trigger a response from the amygdala and ventral striatum, part of the brain, which were discussed and illustrated in Figure (4-6). These areas in the brain are usually associated with challenges and threats which curious problem solvers would feel and appreciate.

Curiosity enhances our *resilience*. With resilience we can deal with complex and unstable socio-economic problems. Resilience is highly needed when dealing with a socio-economic situation which have an unclear outcome, or very difficult to be achieved. Resilience in problems solving helps to establish well defined boundaries to be dealt with. A well-defined problem is one with clear specifications of the start state (where you are), goal state (where you want to be) and the processes for reaching the

goal state (how to get there). Curiosity would help us to deal with ill-defined problems, especially those that are lacking clear specification of the start state, goal state, or the processes for reaching the goal state.

Being curious about sustained solutions to our socio-economic issue brings specific solutions that aren't sustainable nor holistic. Bringing solutions based on curiosity prevent sources of problems to occur again. With selective curiosity sources of opportunities help the mindsets to be more resilient and ready for challenges. Curiosity help us to *break problems into constructs* where opportunities can be found in almost all of them. The collection of these opportunities would be the constructs for the outcome solution.

There are specific methods of problem-solving, however few would lead to resilient curious practices. Example of the methods that raise curiosity would include: *systematic searching, trial and error, difference reduction, means-end analysis, working backward and using analogical thinking*. However, solving problems in logical and planned ways rarely leads to curiosity, or sustained resilience.

*All the realised problems that were solved and brought real development to humanity came from working on the field with "trial and error".*

Curiosity lead to resilience in problem-solving which starts from the time we attempt to build problem statement. *Open minded, non-biased noise free observations* that turns the physically collected data into absorbed information help us to be more curious.

Once a problem statement is clearly identified, pull thinking and systemic exploration can help the organisation, or the concerned community in stages of codification and classification. The codification ensure that we know what is basic leads of what

might lead to the solution outcome and what is only causing towards visualising the outcome. The classification stage helps us to see other variables that influence what leads to the solution. This stage would help us to initiate combination of solutions and including solutions that comes from integrating problem opportunities.

At the classification stage, the problem statement would come with an improvement in the process of how to see the opportunities and build-up learning that leads to innovation and incubation of results and once this learning is acted upon we move to the stratification stage. Therefore, monitoring curiously an economic issue situation to the extent of codifying it, then classifying it and stratifying it would make us gradually to both recognise and re-define any complex problem effectively.

## **Future Foresight of Socio-Economic Problems Patterns**

The psychology of problem-solving needs deeper research in many areas as it has many direct and indirect benefits on the socio-economic problem-solving and the management of its future foresight. To embark on the future of *how socio-economic problems would be*, the patterns of socio-economic changes are foresighted. The socio-economic project impacts are identified along with the behaviours, opportunities, and insights about the lives and circumstances of the selected problems and challenges.

Part of future foresight is understanding the *role of both formal and informal economy* that underpins the lives of many communities. This means we need to deeply understand the emotional, spiritual, and physical *realities of the future communities* to effectively

identify and foresight opportunity areas and *design potential interventions*.

## **Brain Elasticity, Plasticity and Impact of Problem-solving**

‘Brain plasticity’ or ‘neuroplasticity’ are terms used by neuroscientists, referring to the brain’s ability to change at any age – for better or worse. Current neuroscience studies show that the brain stretches and grows by making mistakes while attempting to tackle a problem. This flexibility in the brain plays an incredibly important role in exploiting the problem opportunities. This raises the brain development thus shaping the problem solver capacity to manage the problem demands.

With the increasing in the complexity of the foresighted future problems, ‘neuroplasticity’ is becoming an important science, as it would ensure the best methodologies for keeping our brain development in base with the life complexity. Studies if neuroplasticity shows that the physical process of handling problem challenges causes the Grey Matter to shrink which lead to the neural connections in the brain to be refined. These changes in the brain physical content manifest changes in our abilities. For example, each time a socio-economic problem is tackled, a new learning happens which reflects a change in our physical brains. This new brain development creates new ‘neural pathways’ which give new insights to us on how to perform better in solving the next challenge.

Once the problem encounters the brain, the four primary lobes of the brain and convoluted structures found within the lobes would start to get the reaction. As a result of interacting with the problem, the left and right brain hemispheres starts a type

of communication networks where more than 100 billion neural cells are expected to be involved. The process of neuroplasticity helps to build neuronal communication pathways and neural cells in the brain which continue to grow throughout our involvement with our community's problems. Today, neuroscientist confirm that getting engaged in community issues help to stimulate the growth of new neural cells and pathways which improve our capacity to visualise and think.

Thus the more we explore and exploit socio-economic problems, the more we protect the brain 'neural pathways'. This protect the brain memory, from both being degraded, or being severed. This physical maintenance and development of pathology that come with the frequent interactions of the brain can result in improving the capacity of the problem solver to innovate.

Maintaining brain plasticity means maintaining cognitive growth, just like when we were younger; growing our brain by constantly learning new things, embarking on new adventures and showing an inquisitive and explorative spirit. This is why we called this experience and journey 'Youth Economy', Buheji (2018). Hence, one could say that socio-economic problem-solving has an additional advantage as being a natural supplement that prevent the cognitive decline and actually retrain the brain health functionality.

*Restating the problem means understanding its causes, such as looking at what, where and when it started. "What" questions help to identify the problem and its essence for existence.*

Understanding the physiology and psychology of the brain help to identify which brain mechanisms to target and how to utilise these mechanisms effectively. In a recent neuroplasticity research finding, the humans senses found to be closely connected to

their memory and cognition. Because of the interdependence of the sense, a weakness in utilisation in one of the senses is often related to, or can cause, the weakness in other senses. The study shows that this might lead in the end of the weakness in the memory. Hence, using our senses in problem-solving enhances our memory and cognition abilities and vice versa is also true.

Communities today can reap the benefits of more lifelong learning socio-economic involvements through their NGOs programs that focus on engaging all the ages in solving communities' issues. Such programs help our brains to be less distracted and to be more competent in processing what could be observed. For example, the engagement with communities' challenges help the elderly to store images of their new experiences and enhance their cognition which motivate their rest of senses without having trouble to functionally use them effectively.

## **Managing Problem Ambiguity**

Though the ambiguity of the socio-economic problem might seem to be counterintuitive, not knowing the answers actually inspires the human mindset. *Not knowing a clear path or even the outcome of a socio-economic problem when we start, raises the curiosity of learning. This would help us to come-up with creative solutions and pursue the outcome that we couldn't clearly visualise.*

If we always humbly start with a mindset that admits about not knowing the answer to the problem we've facing, we'll usually end-up with a clearer focus. Hence, embracing of ambiguity will guide us toward more focus and qualities of more ideas that are generative, since with focus it would be easy to discard bad ideas. Focus helps us overcome the variety of obstacles and constraints



towards exploring deep hidden opportunities and unexpected solutions.

*Thus starting with humbly admitting the type of opportunities inside the problem, increase our chances of believing in the importance of ambiguity towards a unique outcome.* Starting with this mindset help our approach to be iterative, despite the variety of opportunities that can be discovered and ways it would be tackled.

By continually iterating, refining, and improving the approaches for exploring and linking opportunities; the assumptions of our mindset for seeing and dealing with the socio-economic problem would be unlocked, thus lead to a differentiated outcome.

Once our assumptions change we become more responsive to the problem details. This makes the problem solution ready to be tested with the new assumptions. Iteration of the problem investigation attempt allows us to see different opportunities on what is explored. Sometimes iteration also help us to go to the one we got wrong and even follow our hunches, but ultimately arrive at a solution that will be adopted and embraced.

***Problem-solving Lab- Case FOUR***  
***Reducing Jewellery Theft in the Souq***

**A) Summary of the Socio-economic Problem Story**

Since more than hundreds of years' jewellery and pearls have been linked to Manama the capital of Bahrain now. It is the land of Taylos, where Jewellery was discovered in graves and which goes back to thousands of years. Jewellery theft have been a challenge for many countries, however for Bahrain it is an issue of dignity and a problem that directly effects its socio-economy, as many tourists come to Bahrain to buy its unique high-quality Jewellery. Moreover, it is home for the most popular annual Jewellery exhibition in the world, 'Bahrain Jewellery Exhibition and Show'.

Jewellery owners have been always ahead of the game when it comes to traditional security procedure and usually the shop owners and the staff collaborate with their neighbouring shops to monitor suspicious customers.

In the last ten years, 'Community-Policing' was given the responsibility of inspecting the Jewellery shops to strengthen the law-enforcement. However, the increase in the amount of Jewellery shops thefts have raised many questions in the current suitable role of community-policing in preventing thefts. Many merchants' complained that they started to feel insecure, because of the rapid increase and advancement of jewellery thefts.

Different shops were reported to be frequently robbed due to lack of workers' attention, malfunctions of the security camera's, or due to declining to report the theft due to the difficulty of theft follow-up procedures. In the last ten years, the amount of theft in this sector have increase to more than 12% annually compared to a previous year.

**B) The Classical Solution to such Problem**

- 1- Plan to provide an increase in the number of community police in the market
- 2- Increase the number of community police.
- 3- Increased number of security cameras.
- 4- Increase the market patrols

**C) The Inspiring Socio-Economic Solution**

*1- Understanding the Problem Vectors*

The Community police can increase the efficiency of the security assessment and community prevention through the use of available resources. However, community policing or even community protection is not only the role of the police but the concerned parties and the community stakeholders. Figure (4-12) illustrate the problem vectors which calls for collaborative community prevention and application of 'Incident Management System' for Jewellery Shops, besides establishing effective community policing.

Figure (4-12) Problem Vectors of Reducing Jewellery Theft



Then the first vector is about Collaborative Protection Program for Jewellery protection. This means we need to improve also the communication model between all the stakeholders. This would lead to the third vector that is building trust between concerned parties and confidence in the security system again to all the investors.

## *2- The solution Proposed*

### **Starting with Communication Model Improvement**

In order to decrease the theft rate in jewellery shops, the security screening and assessment mechanism need to be improved. This work started by improving the mechanism of communication between community police and jewellery shops. This means specific awareness of jewellery shops to police and vice versa need to be established. This means we need to increase the sense of security and increase community confidence in this security.

### **Building Community Partnership**

In order to achieve security and community stability the principle of community partnership was promoted to ensure the targeted community stability. The type and quantity of theft reports in the different jewellery shops were analysed. Rate of theft cases differed in the different shops. Most of the shops (i.e. 40%) had Jewellery theft issue, while others reported theft of different forms of Gold and only 8% reported theft of Cash.

Meetings were held between a team from police and 'Jewellery Community' partners to determine the type and level of security in the jewellery shops; according to their importance. A schedule for the evaluation visits was prepared. The shops were classified according to their emergency preparedness, including their early detection system and type of risk factors that are relevant to the values in the shop and its location.

After the risk factors were assessed and identified, the jewellery shops owners and their staff were explained the risk factors in each shop. The explanation was followed by clear cut instructions how the shop owners should communicate and re-define its security requirements. Also, the evaluation showed how the community-police should re-build its customised services in relevant to each shop type. A sticker with instructions of theft prevention was given to each participating shop.

### **Observations for Opportunities Collected**

Visits were arranged by the problem solver and a selected group of community police to the jewellery shops to collect number of observations. About 80% of the jewellery shops applies standards and preventive measures against thefts. 20% of the shops are either below the standard or higher than the standard. None of these shops have discussed their best practices and how they managed to reduce or control or discover theft in the right time.

The field observations revealed: different jewellery should have different level of security requirements and expectations. Also, the field observations shown that the community-police doesn't have services a round-the-clock. The field observation also showed that there is no differentiation of security measures between jewellery sales seasons. The amount of monitoring visits to monitor specific security points for the Jewellery Shops were not aligned with the security cameras operations, especially after midnight. Almost all the shops found with no enough lighting in comparison the places where certain jewellery shops are located.

The analysis revealed that there are causes in some shops that increase the likelihood of thefts. It turned out that some shops need to raise awareness and education on how to prevent theft and the importance of self-protection.

### **Focus on raising the effectiveness of Collaborative Community Prevention**

In order to raise community prevention; continuous inspection, evaluation and rating of the jewellery shops in terms of importance and risks were planned to be done on annual basis. Observations raised on the jewellery shops need to be corrected and followed up. Education and training of the shops staff and their relation to public safety and security procedures need to be updated and disseminated in a manual suitable to each type of shop conditions.

A team of 'Collaborative Theft Prevention Team' started to analyse all the types of shops based on their risk factor and 'reported previous history'. A free request for police assessment of level of protection was provided from community policing to all the shops as a service to enhance the collaborative role of the police in supporting self-assessment practices.

The team evaluated the risks of: security cameras, alarm system, low lighting, the shop location, counter jewellery displays, type of shop insurance and validity, employees training, transfer of funds, cashier's location, besides the type of doors and locks used. The movements of the customers were in each jewellery shop and were updated in the theft prevention manual. Almost 90% of the increase in the number of thefts for 2016 and the three years before 2014-2015-2016 have been related to one of these risk factors.

### **Reviewing the Role of Community Police in Jewellery Shops Prevention.**

The community police re-engineered the way it distributes its services for the Jewellery community protection. The level of community partnership with jewellery shops have managed to discover thefts attempts or unreported thefts.

Shops with no history of reported accidents would be given a green sticker and would have a one normal inspection visit per year.

### **Establishing Incident Management System in all Jewellery Shops**

A plan was set to stimulate best-practices sharing and promote the principle of security partnership and competitiveness among shops.

A specially designed 'Incident Management System' was developed and established for each shop to see the wrong doings that might lead to Accident. Shops with no registered Incident and Accidents Records were followed-up closely by the team. All the incidents were designed to be closed by improving the methods of preventing thefts. These incidents were logged in the police system and were used by the team to ensure it is disseminated to all concerned Jewellery Shops.

When Accidents are reported it requires rapid interventions that would ensure proper investigation, audit and analysis, followed by learning of why the accident occurred and how to prevent its repetition again. The shop with reported accident would have one visit every 6 months up to three years, i.e. till it become a self-protected shop. For those with no past accident they would have one visit each year to stimulate and exchange knowledge.

In order to maintain a collaborative culture, we need to activate the way it think, more than just focusing on generating ideas. This means we need to:

- Focus on the type of shops that have repeated incidents of thefts, loss of items, or loss of money.
- Understand the mentality of shop staff vs. the working styles of inspectors (i.e. police).
- Understand, from empathetic field visits, the load and psychology of customer.
- Specify the areas in the country that have more than one recent theft incidents and codify the type of causality of security procedures failures.
- Check the type of training needed in the specified area (area where the inspiring models would be created).
- Continuously develop a training kit for inspectors.
- Work on shifting the paradigm of the inspectors through learning by doing and site visits to 'black spot' shops to show the difference between "policing" and "coaching" inspectors.
- Set a program that focuses mainly on 'black spot' shops (i.e. shops with repeated incidents).
- Diversify the types of training programme in terms of the type of shop staff, level of education, language and the number of staff.
- Setup initiatives to 'train the trainer' to establish internal inspection programmes built into the mindsets of the Jewellery Staff specially in the 'black spot' shops.
- Work on improving the communication model of inspection officers and their teams, as well as ways of receiving calls 24x 7 throughout the year.
- List and share the best practices used in the green sticker shops.



### *3- Outcome of Problem Solution*

The presence of community-policing and their increased engagement with the jewellery shop owners contributed to the prevention of thefts. A slogan of “Community Service Police meet all your theft prevention needs” was spread among the ‘Bahrain Jewellery Shop Owners Society’ (BJS). This reflected also in better partnership programs between the community and the commercial police. The speed of response by the community-police in case of theft accident or incident were measured by different drills and life exercises. It is now reported that police can reach the accident- or incident-site within 7-10 minutes.

More utilisation of police external cameras towards monitoring the flow of jewellery shops and their customers are now ensured; specially in peak seasons. Reports of incidents from the police operation room are shared with the community police for both alert and training purposes. Some of police camera’s reports are send to the jewellery shops owners and discussed with BJS as and when needed.

## **II. STRINGS OF SOCIO-ECONOMIC PROBLEM-SOLVING**

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## CH 5 – VISUALISE

*Empathy & Reflection  
in Problem-solving* ©

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## Visualisation as a means to Re-Invent our Life

*Every problem needs a framework with a visualisation representation of the solution proposed. This framework of visualisation helps us to make sense not only of the data observed and collected, but also in our relation to the problem.* Using visualised framework help to highlight the key relationships between the problem solver and his community issues. Yet many of us aren't aware of how powerful this visualisation can be in their lives.

In everyday life we have an imagination about the things we want or don't want, especially if we are the type of people who worries about the future. This type of imagination replaces and weaken our visualisation capabilities that we used to have when we were under six years old. To retain this visualisation, we need to practice involving it with community issues and set a link of how these issues are related to us. This involvement would help us to start gradually visualising, with less fuzziness, the life we want.

Hence, visualization is about living the reality but in a more purpose controlled way. It is a whole array that relate what you want to achieve to your community, or in addressing a specific issue in your socio-economy, or to your life-purposefulness goals on one side and the positive outcomes, on the other side. No wonder visualisation is considered one of the most important techniques that gurus, leaders and sports legends use to excel in their goals achievement. However, in order to visualize to this level, we must manifest through realised observations, the kind of goals or life we want besides realise why we want it. At that moment, we can understand what we value and what brings us to the moments of self-fulfilment.

*Stating a socio-economic problem sometimes requires drawing the problem, or writing the problem as an equation.*

*With visualisation, socio-economic problems can be synthesised based on the learning outcomes that would be reflected in our lives and our communities condition.* In order to build up our stamina for managing highly complex challenges, we need to map the problem journey that would allow us to visualize the whole process. The mapping helps to see how different opportunities are related to one another. This mapping also helps to build up the simple framework, which helps us to imagine the entire flow of the socio-economic experience. The framework helps us to sort things based on different behavioural, societal, or environmental classifications, thus creating a visualised outcome that helps us organize our thoughts more effectively.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

## **Reflection Behaviour of Problem-solving**

Webster's International Dictionary consider reflection as a "mental consideration of some subject matter, idea or purpose, often with a view to understanding or accepting it, or seeing it in its right relations". *Reflection on problems come from both informal and formal questioning. Formal reflection needs research that provides guidance and frameworks for practice. For informal questions, problems need to be synthesised.*

Reflection on the problem or challenge tackled is part of the learning and thinking. *We reflect to learn something, or we learn as a result of reflecting on the problem. It is a process of internally examining and exploring the problem of concern, triggered by an experience, which creates and clarifies meaning regarding the opportunities explored.* It is a process that requires an attitude that

value emotions which are generated during the problem handling. This process helps to make 'meaning' and a sense of experience after interpreting it.

The interpretation of reflection guides the problem solver to make 'meaning' out of learning. Therefore, one can summarise that reflection on a socio-economic problem is a type of thinking that helps to achieve a better understanding and then leads to new learning.

*Reflection has been well studied in psychology, education and management literature, however, rarely its value been realised in relevance towards the socio-economic problem-solving.* Reflection is a very important process and behaviour that creates meanings in our life journey. We become critically reflective by challenging the established definition of a problem being addressed.

Through reflection we can differentiate how the problem requirements can be dealt with. Our reflection controls the way we perceive, realise and act on the problem. This reflection helps to build-up learning from discontinuous, incremental accumulation of the events which helps to build up more routinized, habitual, 'lower-level' learning and then stimulates 'higher-level' learning.

## **Reflective Thinking and Problem-solving**

Using reflective thinking in problem-solving is more important than using critical thinking for socio-economic conditions. Critical thinking is about using cognitive skills or strategies that increase the probability of a desirable outcome, i.e. thinking that is purposeful, reasoned and goal-directed. It is a kind of thinking involved in solving problems, formulating inferences and calculating likelihoods. While reflective thinking focuses

on shifting individuals' capability from making decisions based on opinions to making judgments. Through reflective thinking learning of complex problem-solving situations help to exploit more opportunities. This type of thinking helps us to focus more on desired outcomes.

The reflective thinking demands attention to both terms "reflection" and "thinking" specially in problem-based learning. Dewey (1938) seen that reflective thinking importance comes from its role in creating an active and persistent belief. Reflective learning that comes from solving socio-economic issues helps people to assess what they know, what they need to know and how they bridge that gap between different situations.

*A mental block is any distraction that would keep the problem investigator from reaching a well-defined problem; where the problem would have clear goal state, clear initial state, clear sub-goals (problem can be broken down) and clear problem space.*

*While modern societies are becoming more complex; information is becoming available and changing more rapidly; prompting users to rethink, switch directions, and to constantly change the problem-solving strategies. Thus, it is increasingly important to prompt reflective thinking during learning, thus helping learners to develop strategies and apply new knowledge to the community complex situations.*

## **Accuracy of Selection before Visualisation & Reflection**

One of the most challenging issues for solving complex socio-economic issues is the proper selection of the sample that we explore and build our observation around. Through noise



free observation we can build proper visualisation and we can effectively make most accurate reflection. Many socio-economic issues are seen to be complex, or can't be solved, or seen to be totally dependent on resources due to what we call 'Selection Bias' which occurs specifically at the beginning of the problem solving stage.

During World War II the British Army noticed that few of their aircraft were returning from the German front, and those that came back had been hit specifically in certain places. Using logical reasoning, the 'British Air Force Engineers' built their hypothesis for a solution to this problem based on the collected observation from these returning aircraft-fighters; in an effort to minimize their losses. Actually, the engineers went through specifying where to keep the steel armors to protect the aircraft-fighters from bullets and shells.

Special protection points were specified for returning aircrafts in both wings and mid-air, and to a lesser extent in the rear wing, while the cockpit and tail were almost intact. Areas thought the logical reasoning to be red-spots for hits by the enemy.

After trying this solution in many aircraft-fighters, the engineers found that still most of the planes are still crashing, and only few of them are coming back. Here, the army decided to hire scientists from outside the field which was the mathematician Abraham Wald. Wald directly spotted the major mistake the Airforce engineers did, i.e. having biased observation and sample on the wrong aircraft-fighters. Wald emphasised that simply the planes inspected by the engineers, who received bullets in the wings and the middle, were good sample planes since they managed to return. However, the aircraft-fighters that fall-down must be hit in other areas which are not from the areas identified earlier. The field investigation of the crashed aircraft-fighters found what

Wald said is true and that almost all the aircrafts were hit in the cockpit or tail, indicating that these are really fragile places, which need to be strengthened.

Applying this principle to socio-economic issues, as the ones listed in Appendix (2), in relevance to many complex services as education, healthcare, electricity and water, municipalities, etc. shows that we need to carefully select what missing and not what available in the services provided in order to come up with more accurate visualised outcome.

This technique is highly linked to 'Differential Diagnosis' which we shall discuss together in Chapter Nine and is relevant to the field studies of Econometrics and the practices of treatment effects that are also used indirectly in certain areas in this handbook.

## **Establishing Problem Meaning**

Understanding the problem meaning is very important to its structure. The problem meaning helps us to establish a habitual expectation of what if, if-then and cause and effect. This helps in building the problem perspectives through first setting all the assumptions, theories, propositions, beliefs and goal orientations.

Through understanding the problem deep meaning, we build the capacity for evaluation which is assimilated to lead to a comprehensive interpretation. Problem meaning perspectives help to establish reflective judgement on it which involve criteria for making 'value judgements'.

*With reflection on the problem observation, we assess the grounds of what are the justifications for its existence. If utilised and controlled, reflections strengthen, extends, and refines the structures of how to*

*deal with the problem, i.e. our habits, actions or reactions helps to enhance the dispositions and capabilities of how to make the utmost of the problem analysis.*

*Claiming experience with the problem tend to resort to psychological defence mechanisms and disable us to explore its hidden opportunities effectively. Referring to experience during attempts at solving a problem help us to reinforce long-established frames of reference, thus creating what is thought to be new meaning schemes. Reflective interpretation of the problem helps us to correct its distortions to proper reasoning and attitudes which help us to overcome the experience blockage. Once experience blockage is overcome critical reflection would help to accurately identify the distinguished patterns of the problem.*

## **Definition of Empathy**

Empathy is defined as the cognitive ability to recognize and understand the thoughts, perspectives, feelings and actions of other individuals, organisation, community or even country. The work of Stotland (1969) sees empathy as an emotional experience that absorb the emotions of others, or the environment around. Therefore, empathy can be summarised as an influential affective feeling that raises our ability to discriminate and identify the emotional states of the socio-economic problem and building the capacity to see it from different perspectives.

*Empathy can help to overcome the 'specialities barriers' when tackling a complex problem, since it is a subject that can cross the board of many disciplines. With empathy you can use management to solve medical, or law, or an innovation related problem and vice versa. Besides empathy has its long roots in philosophy and*

psychology, which help it to be used in different areas of economic decision-making.

Empathy is very important for social welfare and socio-economic problems including concerns about the community issues. Whereas empathy works when our total capacity is diverted to put ourselves inside the problem thus to share the thoughts that come out of that.

## Empathy and Problem-solving

Empathy and empathetic thinking are very important for socio-economic problem-solving. With empathy we can deal with influential affective feelings that raise our ability to discriminate and identify emotional states of the surroundings.

*Empathy works when the total capacity of a problem is diverted towards enhancing the economic and socio-economic productivity. Having empathy while solving a problem give us a more resilient understanding of what it could be in particular circumstances.* Singer and Fehr (2005) called this process 'mentalizing'. Therefore, empathy must be considered as an essential practice that need to be embedded in all human-related problems since it enables us to understand the nature of communication and the strategic interactions between the community and the environment.

*With empathetic thinking during problem-solving, we can bring 'reverse thinking' or call for 'radical change' that would be more associated with the human values and thus discover more hidden socio-economic opportunities.*

Empathy helps us to accurately anticipate problem opportunities according to actions and contributions. With empathy more continuous developments in behavioural

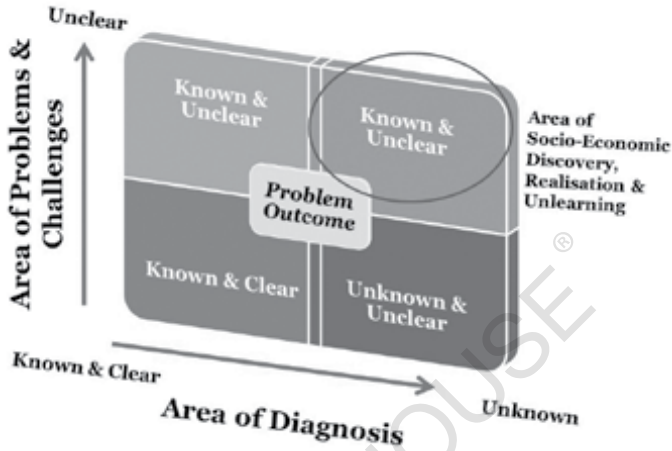
and experimental opportunities can be achieved. Through empathetic identification, equilibrium to preferences and organisations, or community's needs can be sustained to achieve better solutions for the complex problems. With empathy, when solving a problem, we can ensure that the national or the community interest are the priority, instead of just meeting the individual interests. The unique application of empathetic problem-solving can help us see the big picture when tackling any sensitive issue that is needed for the benefit of a nation or a community. Empathetic solving of healthcare, education, municipality services... etc. can help to bring in best opportunities.

*Designing empathetic solutions would help to manage many socio-economic challenges that are important to Sustainable Development Goals (SDG's) issues.* Through such designed empathetic thinking we can immerse ourselves in another world. This thinking, not only opens us to new creative possibilities, but it allows us to leave behind preconceived ideas.

## **Empathetic Engineering and Problem-solving**

*In order to establish empathy in the problem solution diagnosis stage, we need to visualise the problem outcome.* This means we need to identify the area of diagnosis and the area of problems and challenges while we try to feel the problem outcome. The idea here is to push for a diagnosis that is based on realised, known and clear Socio-Economic outcomes as shown in Figure (5-1). This would help us to ensure reaching the 'discovery stage' and improve the learning and unlearning during the total problem solving journey.

Figure (5-1) Diagnosis of Problem Outcome till the Stage of Discovery



*Problem-solving can help to build empathetic models of the society and its functioning on the basis of the strategic interaction between the problem solver and the concerned problem stakeholders.* With empathy, we will consider the essential practices that need to be embedded during the exploration process. This should help to enable us to understand the nature of communication and the problem interactions needed. It is highly recommended that the reader refers to Exercise (2) and Figure (A-3-1) in Appendix (3) at this point to practice the concept of empathy and empathetic thinking.

The benefit of empathy is that if it is conditioned, or engineered it would help us to better accurately anticipate problems contribution. Therefore, empathetic engineering is highly needed here in order to live and mentalize the needs and feelings of the problem. The interest in empathetic engineering is expected to pick-up more with the continuous developments in behavioural and experimental

economics which have now started to include empathy among a number of other emotions attributed to prosocial behaviour.

## **Mechanism of the Heart during Empathetic Problem-solving**

*Empathy is about the intelligence within the centre of the heart and the brain, which when combined, generate better empathetic focus on issues and challenges.* When tackling a socio-economic issue, the Central Nervous System would be the main controller of the heart and the brain of a problem solver. The interaction with a socio-economic problem would initiate the centre of the human consciousness which triggers both the heart and the brain again. Therefore, while the brain sends the heart messages, the heart starts to send the brain new coded messages based on the field interaction, which are done to calibrate the visualisation of proposed problem solutions. Hence the power of the solution outcome would be using the intelligence conclusions and opportunities explored by both the heart and the brain. The more this combination is explored together in a collaborative way, the more the spirit or the soul would carry waves of persistence and perseverance, which bring in realised development solutions that can sustain and re-invent our communities lives forever.

*Similar to the brain, the heart has a great role in creating empathetic solutions. The emotions extracted are led by the heart interactions with the problem challenges and create: feelings state (feels, qualia), biological state (physiological arousal) and functional state (motivation, coping, social regulation, expression, communication).*

The emotions created for each problem interaction type is not uniform, as each problem carries unique codes since they are the resultant of different levels or state or a construct of all of them.

*'Culture' can be also another source of distraction as it defines our way of living and our ability to generate ideas.*

While the mind tends to rationalize our desires and reactions, the heart often identifies the common sense. Therefore, the heart plays as the major coordinator, synchronizer and response process regulators for managing the empathetic thinking that counter the problem challenges.

Aristotle (384-322 BCE) was one of the earliest philosophers who seen the importance of emotions in empathetic problem-solving. Aristotle saw that emotions are connected to actions and they shape our beliefs. Later, Descartes (1596-1650) seen emotions tied to problems and challenges of life through the narrative and the stories that help to build the 'emotional identifications' that bring in the hidden opportunities inside the problem.

*When tackling socio-economic issues with emotions we can see empathetically that life is "worth living", hence this enhances our resilience to respond flexibly to the complexity of the problem studied. The heart can be considered to be one of three minds that the problem solver can use during the investigation of opportunities inside each problem. Actually, the heart can be considered the superconscious mind that plays an important part with the other two minds: the reasoning/conscious mind and the non-reasoning/subconscious mind.*

*The superconscious mind in the heart helps to explore the problem opportunities and bring insights into creativity. The problem solution creates inspiration and inner fulfilment. This creates an influence also on the reasoning/conscious mind which directs the problem solver empathetic thoughts to start taking action, or countermeasures. The conscious mind uses the information coming from the heart to push feelings of passion that help to enhance focus and reasoning.*



The consistency on the ability to focus during the exploration of the problem opportunities raises the problem solver ability to visualise the problem outcome.

The visualisation can be created by the conscious mind and would lead usually to explanation of the problem without deep reasoning. While if visualisation is done by the subconscious mind it would utilise the collections of previous memories, thoughts and feelings to propose the best solution. The conscious mind act like the 'problem exploration programmer', it programs the possible opportunities through the software which is here is the subconscious mind. Hence, the mechanism of the heart during empathetic problem-solving would work like the inner guide that puts us in touch with our true-self, our life-purpose and provides insight into how to best steer our life. It has an intelligence that seems to know us better than we know ourselves.

Hogenboom (2018) of BBC News reported for about a research breakthrough that shows an emerging evidence of how listening to heartbeat can shape the way and speed of taking decisions about specific life challenges or events. This ability is referred to scientifically as 'interception' and it can be enhanced after a problem interaction, once we tune our heart beats and establish the necessary emotions. These emotions establish the "intuition" and the feelings of empathy.

Just to illustrate the differentiation between the mind and the heart in dealing with problems, let us see how the mind and the heart would react to 'youth unemployment' issue, as Case (22). The mind would usually start by asking what is the type of unemployment and how long these youths have been unemployed? While the heart would investigate how these youths are surviving without being employed and what are the alternatives.

*Freeing our ability from 'restrictions of imagination' and 'restrictions of visualisation' enhance our ability to enjoy the problem-solving journey with the spirit of creativity.*

If we take another socio-economic issue as 'youth migration', *Case (47)* sub-case (1). The mind would ask why youth are migrating. While the heart would focus on how to appreciate the benefit of migration, but also mitigate its risks.

In summary, the heart is a very important receiver to socio-economic problem solutions, as through the heart we perceive the problem environment and send messages to the brain to make a proper response through neurotransmitters.

## **Neuro-economics and Empathetic Problem-solving**

*With the development of Behavioural Economics and Neuro-economics, we need to look at empathy applications and the possibility of engineering the socio-economic problems towards the benefits of humanity.*

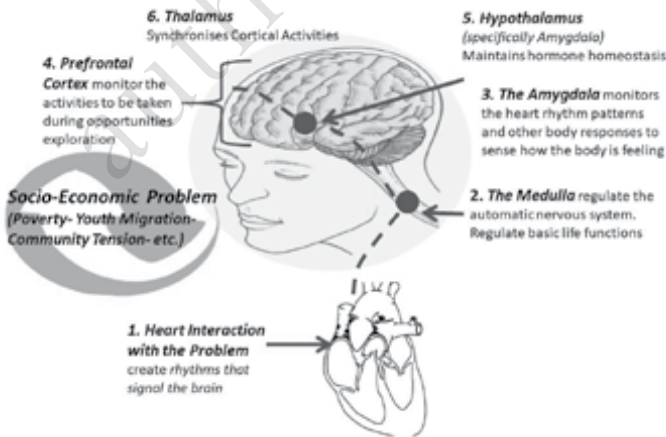
Neuro-economics tries to analyse the nature of the activation of the human brain and the related nervous system. During empathetic problem solving we carry out economic problem decisions through different forms of economic experiments. Neuro-economists believe that such studies and empathetic applications will help to understand the sophisticated problems more closely.

*Once enough knowledge is collected about the problem, we can start our early attempts for writing the story based on preliminary results which would help us visualise more the outcome expected before-during-and after the field study.*

When facing a socio-economic problem such as the issues of poverty, youth migration, community tension, etc., shown in Figure (5-2) the following mechanisms happens:

1. Heart interact with the problem and create rhythms that signal the brain.
2. The (Medulla) regulate the automatic nervous system which helps to regulate the basic reactions to the problem and ensure its role as part of life functions calibration.
3. The (Amygdala) monitors the heart rhythm patterns and other body responses to sense how the body is feeling.
4. The (Prefrontal Cortex) monitor the activities to be taken during opportunities exploration
5. The (Hypothalamus) specifically the (Amygdala) work to maintain the hormone homeostasis and push
6. The (Thalamus) to synchronise the (Cortical) activities

Figure (5-2) Illustrates the Heart-Brain mechanism during Empathetic Problem-solving attempts



*Through neuroscience, we can raise our ability to engineer the problem through motivational reasoning. The empathetic engineering in neuroscience would help us to better absorb the others beliefs, intentions and motivations.* The recent development of Social Neuroscience (SN) is expected to help complex socio-economic problem-solving. SN help to develop the problem opportunities further since it differentiates between both ‘cognitive empathy’ and ‘affective empathy’. We use ‘cognitive empathy’ in the problem-solving to utilise the capacity of the people’s intentions and in creating a more effective outcome. While ‘affective empathy’ is used to ensure that the feelings of others are shared during problem solving journey.

## **Empathetic Engineering in Communities Problem-solving**

Through empathetic engineering in the problem-solving, ‘empathetic identification’ can be built. This identification is crucial for human communities’ problem-solving, because without it, equilibrium between preferences and organisational, or community’s needs won’t sustain. Through empathetic engineering, the interest of the community is focused and so the feelings of its needs.

*The unique application of empathetic engineering in problem-solving can help us see the ‘big picture’ when tackling any sensitive issue that is needed for the benefit of a nation or a community.* Empathetic Engineering is very helpful in solving community issues related to healthcare, education, engineering, etc. Also empathetic engineering is very suitable for tackling issue as low self-sufficiency, or food security, or in improving the overall community quality of life.

## Empathy and the Need for Customised Solutions

With the rapid development of the different society sectors, the benefit from one size fits all technology is becoming limited. Technology solutions would only be successful or even meaningful if it is classified or stratified to address customized solutions, i.e. in the case of elderly it would be very complex and the solutions need to be hybrid.

One of the gradually coming models for creating more customised solution is the “Service Analysis Triangle” (SAT) of Furseth and Cuthbertson (2016). SAT framework compares between the available default solution model that helps the organization to compete to deliver services to citizens, providers and governments and in-home care, to that models of customised services that would enhance the ‘independent living’ and the quality of life. Therefore, the challenges in the future would be to manage the complexity of customization of socio-economic solution through the alarming for the importance of readiness for what is coming up by 2050. In that year, elderly people, i.e. 70 years old and above, for example, would start to be more than youth. This would be for the first time in history and many developed countries in the world are preparing for this day. Thus, the expectation of services in such population type would be more complex.

*For ‘problem-finding’, breakthroughs require first ‘purpose determination’ that would give specific function for practical solutions. Then possible solutions would be generated. This should help to establish specific target selection where the ideas are more shaped through more idealized solution followed by more detailed specifications.*

## Building Empathy in Problem Story Scenario

*Problem story scenarios are very important for effective problem empathetic thinking. Building a problem story scenario, as shown*

in Figure (5-3) help to effectively explore its opportunities and generates more important facts towards building the model and the final story. The more opportunities are exploited and synthesized, the more the ideas would help to identify new learning areas that would strengthen the outcome of the empathetic thinking.

Figure (5-3) Building the Empathetic Story Scenario



*In order to build the story, whether before-during-after the field visit to the problem; the opportunities need to be realised to discover the best solution.* Problem opportunities can be identified by sensory perceptions which assess the problem through empathetic thinking; i.e. through feeling the pain, the needs or the wants of the problem and its suitable solution. Problem activities and constraints can be another source of problem opportunities or a source for building up the story. As we approach to complete all the previous activities as shown in Table (5-1), thoughts of problem outcomes would help to build up the problem interpretation, which in turn, helps to build the ‘problem story’ in many final details. *We finalise the problem story building by ensuring clear identification of the problem stakeholders, i.e. those that can influence the problem or can be influenced by the problem.* Case (6) of Non-Communicable Diseases (NCDs) shows how

the primary care managed to build a world-class story through following Table (5-1).

Table (5-1) Requirements for Building a Problem Story of of Non-Communicable Diseases (NCDs) as an example

<b>Activities</b>	<b>Opportunities Realised</b>	<b>Build the Story</b>	<b>Discover Best Solution</b>
Sensory Perceptions	NCD's (Diabetes, Blood Pressure, Cholesterol and Obesity) couldn't be discovered on time.	The story is about the capacity to discover NCDs on time.	Solution need to be around clinics (actual or virtual) that can discover early
Problem Empathetic Assessment	It is about Quality of Life (QoL)	Many NCDs infected from various generations	Way Medical Diagnosis is done to reduce negative influence on (QoL)
Problem Pain / Needs / Wants	Youth is becoming NCD's patients, while population is having less fertility and a lengthening of Ages	Youth with no or less NCDs risk so that they enjoy more (QoL) during long life and contribute to the socio-economy	Increase Youth NCDs Discovery Partners with clear mitigation of the main NCD's diseases programs

<b>Activities</b>	<b>Opportunities Realised</b>	<b>Build the Story</b>	<b>Discover Best Solution</b>
Problem Activities	Early detection are only limited to Physicians that have no time for NCDs physical detection	Improve the detection capacity for the Physicians with the same resources	Involve all Healthcare and Medical Staff in the efforts of 'NCDs early detection' by setting a target 'hit-rate'
Problem Constraints	Time, Population, Lifestyle, Collaboration with Stakeholders	Part (1) Show the Capacity to Discover Part (2) Show the Capacity to Eliminate	Model for both the Capacity to Discover & the Capacity to Eliminate
Outcomes Thought	Country Free from NCDs	Unique counter-measure of high risk NCDs	New lifestyle of Self-management against NCDs risks
Problem Interpretation	Expensive Life threatening risks could be eliminated	Many chronic complex problems could be changed if government starts with the intention of finding the opportunities in the problem	The solution opened more new projects that followed to give priority to emergency cases



Activities	Opportunities Realised	Build the Story	Discover Best Solution
Problem Stakeholders	Medical and Healthcare Staff, Patients with low with high risk of NCDs, Ministry of Education, Government, Families Medicine, Media and Government	Shake-up the enablers in the system that are causing sustenance of NCDs Risks in the coming generations	NCDs project that lead to: 1-Enhancing (QoL) through Inspiring Families Physicians 2-Practicing Triage to inspire priority system 3-Improving Appointment system by optimising the collective role of Social Workers, Health Educational Specialists and Health Visitors Primary Care to ensure strong family screening. 4- Enhancing patients time spent with physicians which target discovery & reduction of NCDs Level Risk

At this point, it is good to refer to Exercise (2) in Appendix (3) which shows how setting the socio-economic programs can help to shift towards ‘Empathetic Thinking’.

***Problem-solving Lab- Case FIVE***  
***Solving Blockages of Sanitary Utility Services***

**A) Summary of the Socio-economic Problem Story**

In the narrow streets of Manama, in the different seasons but specially during winter, you'll notice a waste sewage water smell with a flood of water filling the road and even at the walking pathways. In such areas, many residents have been complaining about the quality of life specially during winter where the smell of sewage and ability to walk to even the neighbouring houses or shops becomes very difficult. May be this was acceptable to Bahrain many years ago, but this is not any more acceptable with citizen whom pay high expenses for sewage and the sanitary utility services and expect better quality of life as their similar citizens living in other cities.

Unfortunately, this problem seems to be repeated in different areas in the country and therefore there was a need for investigating how to eliminate the sources of the sewage water flooding in order to improve the quality of life of the residents.

The government, the main supplier of sewage utility services been doing many maintenances to the sanitary networks where old pipes, wells and pumps have been replaced or totally re-designed and specially in the old cities. However, the issue of sewage water flood makes the government embarrassed by the amount of problem specifically in tourist areas and areas where people commute or walk every day.

### **B) The Classical Solution to such Problem**

The classical solution for any utility services improvement would be to increase the number of operation response team responding to sewage blockages calls. Classically, also the government would usually frequently renew all the pumps in the old areas, same as the pumps in the Manama area. Another classical problem solution would be, increasing the maintenance budget and the annual maintenance of the main sewage system network and asking for more advanced equipment. More contractors would be involved and would be on emergency call specially during winter season where sewage system would flood due to limited rain.

### **C) The Inspiring Socio-Economic Solution**

In order to come up with an effective socio-economic solution, we need to understand the problem vectors, i.e. its opportunities wealth that lead to the proposed solution and its expected outcome.

#### *1- Understanding the Problem Vectors*

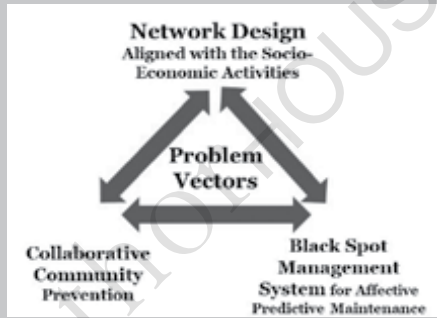
The main problem vector for this case comes from:

- a- The Capacity and the efficiency of the 'Sewage Network System' which is meant to be also a source for recycled water. Annually, there is an increase of 1% to 3% of consumers using the network which either needs to be met by expanding the network (which means extra resources) or by finding other means that would help to increase the network's capacity without the requirement for extra resources.
- b- The habit of the consumers influences the sanitary network in ways never been presented before, and they reflect their socio-economic practices as the way they eat, consume, clean, recycle, behave and respect values. This part of the vector is really about the level of the awareness and realisation of the regulations of the consumer commitment towards the sewage system starting from their own real-state asset.

- c- Part of the problem is the instability in the healthiness of the network due the sewage pumps capacity or functionality, especially with the repeated high number of blockages in the water pumps.

Therefore, the Problem Vectors were designed about: 'Sewage System Network Design', the 'Black Spots Management' which includes the maintenance practices, and Finally the 'Collaborative and Prevention Inspection Practices' that comes from the 'Collaborative Community' as shown in Figure (5-4).

Figure (5-4) Problem Vectors of Sanitary Blockage Case Study



## 2- The solution Proposed

The fitness of the sewage network design was reviewed to the understand its dynamics in relevance to the changes in the location, such as the demographics of the community, the contours of the land, the type of road designs, etc. Series of field studies were launched to the understand the socio-economic practices in community in relevance to sewage system starting from their own real-estate. The performance of the new and old sewage network system was compared in relevant to how they addressed the actual community demand. Even the way and the purpose of network and pump design were evaluated to see any difference and whether old learning are applied.

The following solution steps were taken:

- 1- Categorised the type of activities in the black spot neighbourhood
- 2- More focus was given to those streets that suffer from repeated manhaul (sewer openings) network blockages.
- 3- Both developments of the network and sanitary system pump were assessed for its proper installation.
- 4- The type and name of contractors were reviewed based on effective performance. Those contractors that have done jobs that lead to blockage in less than 3 years were warned. Some others were blacklisted.
- 5- A new 'Speed of Response' to increase the possibility of minimising pump blockages was applied.

Beside the above initial points and since almost 45% of the reasons for dissatisfaction can be rooted for the continuous pump blockages are due to misuse by the consumers, a change management program was set in collaboration between sewage network directorate and public health. Different types of countermeasures were defined to address the sewage network system blockages, including preventive maintenance and intensive programmed maintenance.

Sources of risk in sewage system in general and specifically in the drainage network activities were identified. Now, 'Car Maintenance Garages', 'Barber Shops', 'Fast Food Restaurants', specifically in the old area or in new areas that are designed to domestic use, were identified, shifted or controlled through specific sewage system. Even in non-black spots (i.e. areas where repeated incidents and blockages didn't occur yet) are now identified for more inspection if any the earlier mentioned activities are available in the neighbourhood.

Now there is an established collaboration between Public Health inspectors and the 'Sewage Utility Inspections' in Ministry of Works where traps for particles as solid items, air, hair and grease have to be installed and maintained in each facility that have threat on the sewage system performance, before the real-estate is approved for registration or renewal for the planned activity. The Public Health Inspector would ensure this more periodically as part of the hygiene checks done to the sources of risks activities. This is supported by a knowledge management system that would ensure blockage prevention and improve the collective learning from the repeated incidents in the area.

### *3- Outcome of Problem Solution*

Now due to the selective identification of where the sewage system blockage might occur, the emergency response team improved both the speed of connections, speed in defining locations. The speed of the responses of emergency teams to analyse and intervene with sources of blockage became more professional and accurate in preventing of such incidents to occur again. Solving the repeated blockages in the network now more aligned to avoid the negative causes of turbulence in the system.

Now the "Future State of the Sewage Network" is more defined for Bahrain. More foresight of the future of the quality of life characteristics helps now to establish the countermeasures in the sewage sanitary system. More control on sources of sewage network blockages are treated from the day of planning the new expansions and all the consumers of the utility service be it households or commercial are accountable to their sewage network performance and hence their behaviour towards this service have improved tremendously.

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## CH 6 – EXPERIMENT

*Curiosity & Learning  
in Problem-solving* ©

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## Curiosity and its Role in Re-Inventing Our Lives

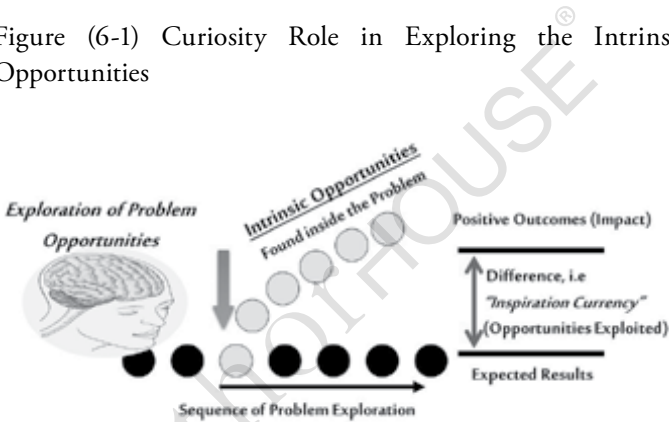
Curiosity is one of the most important 21<sup>st</sup>-century skills. With curiosity, we can characterize the successive changes that are necessary and pursue changes to our lives and the surrounding more effectively. This persistence to pursuing changes stimulates our continuous learning which raises our curiosity again. Therefore, it is believed more today that curiosity contributes to the quality of life and increases the collective capital knowledge of all stakeholders of the socio-economic problem (individuals-organisations-community).

Curiosity is therefore an *act of excitement and direction of behaviour that precedes the exploration steps of the problem solving*. From all the fifty plus main cases and more the three hundred detailed cases listed in Appendix (2), one can't see how the complex and sometimes chronic socio-economic problems could have been solved without curiosity.

The benefit of both sensory and cognitive curiosity is that they both make us capable of interacting positively with new elements in the environment and often help us seek to discover more new experiences. When we are curious, we become more *willing to deal with ambiguity situations, fearlessly*. Provoking curiosity leads to planning more focused explorations. There are different types of curiosity which leads to continuous realization of the stimuli and which enhance our overall impact, these types are known as 'perceptual curiosity'. With absence of curiosity internal stimulants, 'cognitive curiosity' diminishes as a result of repetition. This leads to a decreased desire and state of tension within the problem solver. This limit the problem solver eagerness and desire to the need to know and not to the need to solve.

‘Cognitive curiosity’ is stimulated when the learning of the problem solver become deficient and inconsistent due different reasons. Here, the curiosity is linked to the motives of exploring the environment. The motive of curiosity is one of the psychological motives gained and is classified as one of the motives of excitement and activity. Curiosity increases our attempts to find the intrinsic opportunities inside the problem. The more we are curious about exploring the problem opportunities, the more we can expect the positive outcomes. This is shown in Figure (6-1).

Figure (6-1) Curiosity Role in Exploring the Intrinsic Opportunities



*Social integration raises the spirit of curiosity and make us see the socio-economic problem from different resilient points and then propose solutions that take into account 'social cohesion', 'strong institutional foundation' and 'culture of acceptance'. Societies are better off if they promote social integration through inclusive policies that reduce economic inequality and poverty, and promote sustainable and equitable development. Exercise (6) in Appendix (3) is meant to challenge the reader to practice how curiosity triggered to any or each case in Appendix (2).*

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

## **Social Integration and Curiosity**

Social integration is very important process for creating curiosity in socio-economic problems. Through social integration, we can create more visualisation for unity, desire for inclusion and participation at all levels of society. This visualisation enhances our endeavour towards more acceptance of diversity.

By being curious with: socio-economic demographics, class, level of expression, socio-political freedom and cultural traits; we can actually spot where the problem weakness areas and how it can be dealt with. For example, when we have curiosity about 'social integration', we would explore all the 'equal opportunities' and are the 'human rights' and services that could be part of the mainstream of the solution. Hence, here the 'social integration' can be considered the curious drive towards solving chronic problems, as poverty.

The elimination of social exclusion, through curiosity, in any socio-economic problem means the society would find more competent in exploring economic opportunities and be ready to meet any failures for this cause. Curiosity created a social integration driven mindset which reduced the risk and vulnerability of alienation and marginalization during working for a socio-economic development outcome.

The curiosity helped to improve the social integration solution and led to establishing a participatory path that translates aspirations

and wishes towards an effective outcome. The curiosity made the solutions design represent all the social opportunities.

*In order to accommodate more 'exceptional and disruptive problem solutions'; more simulations and testing of the problems are needed. Curiosity encourage such simulation of the problems by starting to question "why" specific trends occurs in the socio-economic issues under study.*

Demello and Furseth (2016) believe that the we are curios and analyse effectively the culture, the more we'll understand how to overcome the challenges with the contemporary or future problems. Many problems could be solved if we are curios enough to go deeper on the cultural, or through its social psychological link. This analysis helps in understanding the societal differences and attract more critical societal values while addressing the 'independent living' needs.

When we start analysing any social integration opportunities in a complex socio-economic problem we first need to realize the presence of real inclusion and if there are any forms of intolerance. The curios mind helps us to target the socio-economic problem in more stable and productive way. For example, curiosity about creating a secure productivity environment might lead to reducing poverty and in the same time improving the sustainability of social resilience. This would lead to improving communication in the community and avoiding inter-group conflict.

## **Curiosity and Community Problem-solving Initiatives**

Throughout history teach us, until today, that all righteous people, legends and innovators who came in this life, at different era have managed to get involved with a type of community

problem-solving initiatives, one way or another. What differentiated them from the beginning is not their intelligence, or courage or their flexibility of their mindset only, but their curiosity. A community needs such curiosity in order to exert its efforts and to follow up its diligent activities.

Communities driven problem-solving initiatives need to be ready to meet the challenges of the school of life. Curiosity besides the mindset of the problem solvers, both would help us to accept failures in any initiatives, or manage any unexpected performance.

Since human behaviour is linked to community initiatives, the problem solver should therefore investigate with curiosity causes for tension in socio-economic issue, or conditions with imbalanced needs. When we applied this curiosity to cases in Appendix (2), such as the case of instability on the jobs, for the unemployed women, we came with many solutions. Same when we applied this curiosity to the under-performing youth in school. Hence, with curiosity we can increase our potential solutions and we can discover more the hidden opportunities in the problem.

A curious driven community initiative should bring in *internal physical* and *psychological motivation* that raise behaviour in certain circumstances and continue until the end to a certain goal. When a community gets involved with the initiative of solving a specific socio-economic problem, the rising curiosity help them to stimulate their performance and determine their directions to achieve more specific goals.

*To create a breakthrough, we need to assume initially that the problem or the opportunity we are going to confront is different from all others and thus no earlier solution would fit easily to create a realised outcome.*

*Positive reinforcement* can help any community to deal with their socio-economic problem-solving initiatives as it provides immediate reward and acceptance that strengthen their collaborations. With positive reinforcement, we can improve the *learning approaches towards complex tasks*. Therefore, it is highly recommended to always appreciate the *psychological influence* that curiosity creates on any community. Each time a solution is effectively accomplished, the curiosity motivates the community to conduct more *behavioural activity* which increases the collective learning and improve our total performance in dealing with the socio-economic issue.

## **Solving Problems through Blind-spots**

There are many 'blind-spots' in our life where we miss visualise or observe or discover. Blind-spots are very important for socio-economic problems solving, as we believe that they are like the hidden power and natural currency that could be utilised in the right time and place. The more we discover the blind-spots, the more we discover our currency. Therefore, blind-spots are highly used in complex challenging issues, or even in chronic life problems. For example, if we take *Case (1)*, in Appendix (2) we believe that instability in the market towards the rising unemployment will not be resolved in education without having the total involvement of students in both class and school management. i.e. have capital based solution schemes for unemployment as having unemployment insurance, or job opportunities fairs, etc. won't solve the problem effectively. They are all temporary solutions, Thus the blind-spots in *Case (1)* were targeted. The blind-spot targeted was hidden inside the query of 'how to create students fit for the labour market, regardless of background and specialty, or the situation of the labour market'. The second query for discovering the blind-spot was to

realise 'what it takes to make students so resilient and inspired'. These blind-spots occurred because the education planner didn't visualise the dynamics of the labour market and the requirement of students in a turbulent and a global competition economy, where they need to be differentiated by discovering their intrinsic powers. i.e. the sources of their passion.

Blind-spots help to raise our capacity to respond to life's challenges, and thus lead us to build virtual observations and reflections. The blind-spots could be eliminated through techniques developed in 'Inspiration Engineering'. As an author of the book 'Breaking the Shield', the development of blind-spots helped me to develop the community maturity scale through 5 phases:

- *Phase 1- Exploration of the blind-spots*
- *Phase 2-Relation of blind-spots to the expected problem results.*
- *Phase 3- Relation of blind-spots to the expected problem outcome.*
- *Phase 4- The new way of thinking that the blind-spot is creating*
- *Phase 5- The sustained competitive legacy that the discovery blind-spot creates.*

The maturity scale in Exercise (4) in Appendix (3) target to equip the reader with ways of establishing key performance outcomes that are related to the socio-economic issue. By using the proposed 'Maturity Scale' as in Figure (A-3-2) in the exercise we can ensure that the blind-spots are exploited and used to the benefit of advanced solutions that would advance our capability to develop on the ladder of the five phases above.

Once we start the observations in the problem solving journey, the amount of problem blind-spots would be assessed. This is the

phase that is most crucial in the problem-solving lab journey as it needs a resilient and humble spirit, as well as the curiosity to discover. Here, 'pull-thinking' would help us to discover the gap between the 'capacity' needed verses the 'demand'. i.e. it is the gap that would define the blind-spot.

*By getting engaged and then involved in our community issues through focused observations, we would start to get an unpredictable array of discoveries, emotions, and levels of energy that we never presented in ourselves.*

As part of the problems with the social development services, the productivity family programs was assessed for its role in eliminating poverty. The non-values added programs were codified as part of the sub-case (2), in *Case (3)* projects, in Appendix (2). Many blind-spots were identified based on defining the 'black spots' in social development productive families' processes. For example, many black-spots were found in relevance to reductions in the productive families' productive cost, or the improvements of their efficiency, or the enhancement of their outcomes. The blind-spot found around missing the efforts that would help to restore the essence of the 'family unity' and its unique synergy and which would build the productive family job opportunities and key success factor. Such blind-spot helps to deal with the sustenance issues that face many productive families as it builds a differentiation for their production quality and their marketing capability with the entrance of the new family generation.

## **Modular Thinking and Problem-solving**

*During problem-solving lab, participants are encouraged to focus on the solution – not on the problem; to avoid blocking our ability to come up with differentiated solutions.* The focus on the problem,



usually make us more emotional which lead to the blockage of the mind to see potential solutions.

The problem solving lab leads the participants not to focus on 'what needs to be solved', but on 'what needs to be fixed' and 'what went wrong'. For example, focusing on the problem in *Case (32)* sub-case (1) the lab build more modular thinking to deal with the issue of drug trafficking. Hence, instead of increasing the police forces and the customs to manage, or reduce the increase in drugs trafficking in the country, the possibility of refinement and codification of all the smuggling information that reach the police are set as a possibility. Then priorities of the selected points of possible areas, time and type of drugs trafficking probability would be defined, based on the reclassified information. This codification and classification that trigger modular thinking in *Case (32)* is almost used in all the cases in Appendix (2).

*The constructs of modular thinking come from problem-solving or dealing with challenges, failures and/or repetitions.*

Having a modular system helps to build effective problem solution journey and ensures effective communication of the idea to both the problem solver inner-mind and the problem stakeholders. With modules, such as decision after codifications on how to deal and segregate the 'red cases' from the 'green case', in many examples of Appendix (2) relevant to healthcare, traffic accidents, unemployment, etc.; the problem solvers could see the big picture and even in many situations the blind-spots in relevant to the problem. Based on the different modules, the mind would tackle from different perspectives.

The other benefits of modular thinking focus on how it helps to build a holistic thinking as we try to solve horizontally and vertically, i.e. by bringing the solution from outside the speciality

of the socio-economic issue. In this handbook, we claim that most of Appendix (2) cases came from horizontal modular thinking where the big picture for the outcome visualised was always an important community issue that differentiated the solution. For example, in the case of the Humanitarian NGO, the big picture was overcoming poverty in the community, rather than just thinking vertically of Merhamet performance.

Modular thinking is a problem-solving tool that breaks socio-economic problems into *discrete chunks*. The modules would break the problem into component parts to ensure *the integrity of the problem solved* is maintained and continuously developed. The modules thinking help to build a *common understanding* within the concerned stakeholders of the problem-solving framework. This type of thinking found also to have the *capability of decomposing the big issues* into smaller sub-issues that can be *tackled separately and one at a time*. The other benefits of sub-issues are that it answers the question “What?” or “Why”. Thus by putting the modules together, we can answer the question, or fully describe the idea.

If we study nature we would we'll find it made of parts, like (modules). However, all these modules know its place and value as part of the whole system. However, these modules work and solve the different problems autonomously. The autonomous of each module give it the freedom to evolve as the entire organization or a super-structure. So it is natural that with using modular thinking we can eliminate any focus distraction which is very important to the process of observation and selecting the opportunities with a level beyond accurate forecasting, called here intelligence. With modular thinking, we can re-design organisations or bring in different solutions to create a differentiation and then legacy.

*Purpose-driven observations would make us then understand our most important interests and preferences and would raise our level of cognitive and social developments.*

In order to establish modular thinking while tackling a socio-economic problem, the *qualities of the problem* can be evaluated separately. Thus through modular thinking, we can explore the opportunities hidden in the socio-economic challenge.

The more each problem feature is studied separately, in detail, the more the mind would be selective in the solution perceived. You'll find such thinking extensively used in the cases of this handbook. For example, *Case (44)* of the Camel Care, we considered it a socio-economic issue due to the *qualities of the problem* which brings in many hidden opportunities to improve the community. The Gulf countries in the Arab Peninsula are considered the leading countries in Camel Care and Camel Sport. Despite the many economical returns around this business, many socio-economic issues were rising every day without realised solutions. The economic and equality gap between people around this business was alarming and caused many psychological barriers in communication. Therefore, *each problem feature* was studied separately, as modules, in detail and this led to working on four issues in the same time. The first module is about the camels' fitness for competition. The second module focused on the knowledge sharing between the people working with the camels, including the newly graduating specialised camel veterinarians, the camel owners, the camel observers and the camel riders. The third module focused on the management and advancement of the camel hereditary preservation and development. The fourth and last module focused on the return on investment on the camel.

Thus, from the case of the Camel Care and Camel Sport, we can realise how the modular thinking can help us determine how each problem attribute can be developed. With modularity in our thinking towards any socio-economic problem we can focus more on the qualities affecting the content of the potential solutions without fear of failure. These steps are explained in Figure (6-2).

Figure (6-2) Sources of Modular Thinking in Problem-solving



A socio-economic modular thinker needs to accept self-humility, to create the learning necessary for dealing with socio-economic problems. The constructs of modular thinking come from problem-solving process or the attempts of dealing with challenges, failures and/or repetitions. However, this modular thinking to succeed, it needs 'communication model' and also a spirit of persistence that is built over time. For example, when the Ministry of Education accepted some self-humility for their products to the market, i.e. the quality of their students; the modular thinking in *Case (1)* relevant to creating inspiring students, made the educational leaders in the country see the real effectiveness of the role of the school, the curriculum, the quality assurance, the teaching staff, the school educational facilities, the families and the extracurricular activities. Collectively, all these modules create the outcome targeted, i.e. inspiring graduates that are fit for global market competitions and beyond waiting for short-term forecasted jobs.

## Insights as a result of Problem-solving

*With problem-solving labs, we can spread the spirit of measurement and practices based on interviews, questionnaires and focus groups that promote the spirit of curiosity and develop the possibilities of bringing more insights.* Insight has been used in the literature to describe the process by which a problem solver suddenly moves from a state of *not knowing how to solve a problem* to a state of knowing how to solve it. Within the creativity context, insight has also been conceptualized as the cognitive content that enters consciousness suddenly and which is usually called '*the Aha! Moment*'. Regardless of its exact usage, insight can be differentiated from inspiration in terms of its theoretical function.

Insight plays a role in *stretching our limits* as human beings thus helping us to discover more the benefits of abundance thinking which leads to more creative solutions for solving uprising life problems. Insight during problem-solving help to *build communities* that have *differentiation in overcoming challenges* and have the *ability to see the unseen or see things in different ways* and even might have the ability to *alleviate psycho-social problems*.

## Problem-solving and Design Thinking

Design thinking enhances human process abilities thus helping us to develop a mind-set that will not follow conventional problem-solving ways. It is a type of thinking that raises our ability to be intuitive, to recognize patterns of an issue and to construct ideas that are meaningful for the socio-economic issue under focus.

Design thinking thus establish an integrated holistic view that is based on feelings and intuitions where the socio-economic problem goes through three design phases: *problem inspiration*,

*solution ideation and proposed model implementation.* The design thinking triggers the brain to start the *ideation process to generate, to develop and to test ideas.* Implementation of the model is the path that leads from the project stage into people's lives.

In socio-economic design thinking, we can *stimulate the proper experiences* in dealing with the problems by utilising networking and observing recent trends around us. This design thinking helps our *societies to integrate* and produce newly generated ideas towards the socio-economic challenges that would *enhance our communities' readiness* towards change.

In design thinking, the investigator of the socio-economic issue gets into brainstorming session to generate many ideas with the objective not only to solve problems, but to get the community involvement. This build synergetic practices that lead to rational processes which differentiate the way of thinking and the handling of the problem.

One can conclude that design thinking help to develop *concept generation* of the socio-economic issue under study. This concept generation becomes a continuous process between *the dare to challenge a problem* until you start to reflect on all the steps taken for it to be solved and realized.

*'Socio-Economic observation' is an act that might lead to a remark, or judgment, or inference, or an insight, or discovering potentials for solutions, or opportunities for dealing with community issues, problems and/or challenges.*

Psychologically, the design thinking, if properly utilised, would make our mind more engaged with the socio-economic issue when a problem needs to be solved, or when we observe recent trends in our community. When investigating a problem, a result of using social networks platforms and other networking

means, opportunities can be spotted and trigger much easier with design thinking. Most of the sub-cases in the *Bosnian Case (45)* come as a result of design thinking. Observations were collected by first physical presence through field interviews, visits and surveys. This was combined by synthesis observations of the trends happening in relevant to migration, youth quality of life, youth values, the deteriorating economic situation of the lower class and the level of entrepreneurial practices. Observations about how to improve the positiveness of the community psychology, after about 20 years of disastrous civil war were closely collected.

The design thinking then help to improve the capability problem-solving in relevance to the sense- and decision-making process. Communication, networking capabilities, as well as the ability to act quickly is what differentiates the capacity of design thinking and its ability to act on selected socio-economic problem.

Due to design thinking, the problem solver could deal with the unexpected demands and work more focused on improving the socio-economic outcomes. The valuable insights brought by the different measured yardsticks of the design thinking combines the empathy for the problem context with the creativity attempts. This leads to generation of insights and solutions that fit the socio-economic context under study.

In the end, in this handbook, we perceive design thinking as a tool that is meant to help us see things from different perspective. Through getting connected to different situations of the problem, the problem solver would be living the problem. This means the problem solver would be able to think holistically, and thus would have the capacity to visualise the permanent solutions of the problem.

## **Problem-solving and Organisational Learning**

Through our continuous research in the problem areas, we can find a great development that can build new socio-economic factors. This type of practice and experienced analysis builds a learning-organisation that contributes to the building of community cohesion. The learning experience helps to draw any problem codification and classification which would enhance the organisation learning.

The learning that comes from the problem, drive curiosity and make us focus on the development of specific subjects. This type of curiosity makes a great passion for research and the ability to see the big picture. This type of self-development thinking drives us again to try to solve the problem, and to reduce the difference of an issue gap, or build the desired impact in the society, without reliance on authority.

The learning from the socio-economic problem sharpens its potential opportunities that comes from the relationships it brings or the sources of life it contributes. For example, as in *Case (1)*, the accumulate learning in relevant to the educational services capacity towards reducing non-competent, non-inspired, non-motivated job seekers are reviewed. Hence, organisational learning attempts is very important for effective problem solving. The more we have this culture of learning in our organisations and communities, the more we are building a sustained problem solving culture that is competent and renewable,

## **Experiential Learning during Problem-solving**

*Experiential learning is a mental process, which occurs when people sharply work toward determining the solution to a problem. This*



human cognition usually reached by either 'Gestalt Approach' which is a type of thinking that *depends on how the problem is represented and reorganized*; or through 'Focus Approach' where the problem-solving becomes like a *search finding process*. Both 'Gestalt Approach' plus 'Focus Approach' create the seeds of experiential learning. In certain socio-economic problem we use the 'Focus Approach' in others we use the 'Gestalt Approach', in many cases we use both.

*A complete experiential learning can be achieved only when the mindset learns new attitudes, behaviours and more effective ways of how to respond to the complex challenges met.* Therefore, experiential learning programs today are spreading as the most popular training forms of personal development. While learning how to solve a specific problem we are actually discovering new ways of how to deal with life and we are even developing our mindset to be more lean and agile.

*With experiential learning, persistence to solve life challenging problems trigger early the process of ideation.* Therefore, it is thought that our problem-solving capacity is totally dependent on our experiential learning capacity. The way someone learns will impact how we solve a problem. Therefore, it is very important to understand our learning style to overcome the roadblock to being able to solve problems and discover new opportunities. It is not surprising then to say that we need to always differentiate between those who learn primarily visually, or through field observations and those who can learn aurally or through discussion; during the different attempts of problem-solving.

*A complete experiential learning can be achieved only when the mindset learns new attitudes, behaviours and more effective way of how to respond to the complex challenges met.*

*The more we solve problems, the better we are in understanding our role in life and in getting self-fulfilment. Our learning from the consistency of solving problems makes us more agile to deal with different problems in whatever shape and form.* The gradual problem-solving is usually followed by the development of queries which raises the curiosity. As curiosity starts, the whole story would be formulated.

As with readers of detective fiction, problem-solving for socio-economic problems builds experiential learning through first utilising 'interpretative approach'. Particularly with 'poorly- structured problems', problem solvers need to use 'interpretative approach' while exploring information to find relevant patterns and avoid 'dead-ends'. *Using a case. or problem challenge and 'experiential learning' that use debates, peer-to-peer teachings and games can help also to prepare our mind-set for real challenges that are expected in the turbulence of any economy.*

When we are distracted we are more prone to think outside of the problem and this create a source of new 'experiential learning'. This distraction type and level depends on our type of learning, i.e. whether we have introverts or extroverts process of stimuli when we deal with the challenges in the world. For extroverts, the pathway for experiential learning is much shorter, as they would include in their observations the taste, the touch, the visual and auditory sensory processing. For introverts, stimuli run a long, complicated pathway in areas of the brain associated with remembering, planning and solving problems. Hence, the problem solvers need to take care of managing the data and the observation, besides optimising on the opportunities by watching their thinking.

## Role of Problem-Learning in Creating Insights

Many problem solvers during their experiential learning have “insights” which make them move from a state of ‘not knowing how to solve a problem’, to a state of ‘knowing what is the problem’ and then start to visualise how to solve it, (Mayer, 1992). In cases where there are rare abilities and opportunities for transformation or creation of change, the solution following insights could be characterised as a source for a learning. This means that experiential learning can help us to build solution that are based on collaborative efforts. In many stages during the different cases listed in Appendix (2), as a practitioner, I have experienced these collaborative efforts that come without planning in ‘Field’. Therefore, we always say that being synchronised with the field help to bring for us many experience and insights that weren’t planned at all.

*Most of the socio-economic problem-solving observations would involve optimisation of all the senses.*

Experiential learning which is also highly related to ‘problem-based learning’, is also a source of insights. Through this style of learning, instructional methods relevant to problems are introduced at the beginning of the instruction cycle. With problem-based learning we can build cooperative skills, using significant amounts of self-directed learning on the part of the learner.

A community that is poor in valuing and nurturing its citizen’s intellectual curiosity would usually fail also to create proper insights. The insights would help to develop our *understanding of a problem, the way opportunities are made, and how to use creative talent.*

*Experiential learning helps the problem solver to choose between ideas or alternatives, to combine a number of ideas and modify them to create the solution for a better alternative.*

The insights that come from problem-solving come from two basic and interrelated approaches: first, procedures leading to imaginative speculation; second, disciplined ways of behaving so that speculation is not cut down, but valued and encouraged. To enhance imagination, which is the key to creativity, we have to concentrate on the mechanism needed to identify the problem, to search for the solution and to picture the final product or the outcome. From the experience with the cases in Appendix (2), we found that a responsive atmosphere helps to build insight towards effective socio-economic problem solutions.

## **Using Metaphors in Building the Problem Solution**

One of the tools used for experiential learning from the socio-economic issues is setting metaphors for each type of problem. For example, when using analogical thinking in community problems we are actually encouraging the community to make more analogies to similar issues, as using the black-spots, as in *Case (22)*, in controlling fatal traffic accidents. The metaphor of the black-spot, was applied in civil defence high risks areas of fire and safety. The other metaphor was seen in focusing on the black-spots where drug trafficking occurs or distributed. Other black-spots metaphor helped government to manage complaints of the community or illuminate causes for riots. The same metaphor was used in mitigating problems in schools where youth creates problems inside or outside the neighbourhood and in repeated thefts areas in specific precious businesses as jewellery.

Therefore, a *metaphor is considered to be a bridge between the socio-economic problem and the object idea*. Defining a specific metaphor usually helps in *expanding the perspective* about the solution outcome and also in generating new services or products that have never been perceived or created before. This means with a *metaphor the capacity of the problem solver will be enhanced to achieve more* and this will be another source of experiential learning.

## Using Analogies in Building the Problem Solution

To reach better levels of problem solution, we need to continue seeing the socio-economic problems and challenges as valuable opportunities that empower our thinking, and even sources for inspiring us to develop further. These feelings for the importance of challenges can be built by utilising analogical thinking. The limitation of the recourses, the culture and along with the community pressure, should not stop the problem solver from producing valuable ideas and this can be mainly done through using analogies. For example, in each case in Appendix (2), we experience first the collection of the data related to the problem investigated. This integration with the field can include the search for facts, observations, opinions, feelings, and even any irrelevant materials that might be partly related. Then, we used analogical thinking tools to create new and unexpected connections, which lead to unique solutions. Through going through such analogies we can keep the problem and the creative solution flexible and original.

*The practice of observation is a physical process and a philosophy that is essential for every organisation and community so that we spread the spirit of scientific culture towards moving from normal growth to realised development.*

*Experiential learning helps the problem solver to choose between ideas or alternatives, to combine a number of ideas and modify them to create the solution for a better alternative. In experiential learning, the emotional component is more important than the intellectual, while the irrational components are more important than that the rational one.*

*The process of experiential learning focus in making the strange familiar; and making the familiar strange. The tools for this process is 'personal analogy', 'direct analogy', 'symbolic analogy' and last but not least 'fantasy analogy'. For example, when we say for advanced or developing countries that we'll work to make them 'NCD's free countries', i.e. countries with no diseases risks in relevant to 'high blood pressure, diabetes, obesity and high cholesterol', this is considered to be a *fantasy analogy*. However, this *fantasy analogy* helps to create a metaphor that makes the experiential learning journey very exciting and push for further creativity attempts.*

*During problem-solving lab, the problem is incubated for a time, allowing the mind to work on that problem without conscious efforts thus leading to different insights.*

Hence, without the presence of such analogy mechanisms, problem-stating or problem-solving attempts will have a high a limited probability for success. Each of these *analogical mechanisms* actually help to provide *spark of learning and inspiration* in a unique way. For example, in the '*personal analogy*', the *person places himself/herself at the centre of the problem, or sometimes identifies someone with the same feeling and makes him/her the function of an object*. This is how the cases of housing services, *Case (30)* was solved. As a problem solver, I put myself in the place of a young married man who wants to live in a rent towards ownership house and that brought the solutions. Same for the

case of more inspiring students' education, *Case (1)*, or for the better-policing services, *Case (32)*, or for the electricity and water interruptions, or the water leaking, *Cases (4) and (5)*, etc. Through personal analogy we can excite the empathetic thinking and this makes a difference in our visualisation towards a differentiated outcome.

One could say therefore that we are able to *gain new perspectives* by using analogical thinking, as Albert Einstein did. Einstein used analogical thinking early in his life. For example, Einstein used to ask himself "how would the world appear if I were to travel on a beam of light?". This analogical questioning is what made Einstein visualise the possibility of traveling faster than light. If you would study the progress of all the case studies presented at the end of each chapter in this handbook, you'll find how much we applied this Einstein's way of analogical thinking on the different socio-economic issues presented. It is certainly a simple yet powerful technique that worth trying.

## **Differentiation of Learning in Socio-Economic Problem**

The uniqueness of learning when tackling socio-economic problem is that it builds in us a feeling of working on something we highly believe in. When we believe in something, we will always try to solve it, or we'll try to address the problems that come from its way, through using probably higher-order thinking such as evaluation, synthesis and analysis. This higher order thinking helps us to maintain our persistence in this most difficult and critical area. This higher order thinking will let us start a new fresh perspective that tells us to hold on, and we'll then start to feel that there is something behind this challenge. Then we'll realise that what we experienced is normal, since we

have not been trained to manage the pain of escaping a fixed thinking box. Actually, we have been trained most of our life to the opposite, i.e. trained on how to make specific steps to solve a problem. We are told directly and indirectly, then that we are not brilliant, or we do not have fast thinking, if we do not have forward thinking, similar to logical troubleshooting. Yet, life has taught us too that differentiated socio-economic solution comes most of the time not through long thinking, but through differentiated learning that help to create 'radical reverse thinking'.

By going through the *various socio-economic problems and challenges of life, learning mentors can help us be more value-added creatures*. The feeling of frustration when dealing with difficult, or challenging problems along with the *possible confusion and annoyance stretches our minds* and create unlearning and re-learning about the problem assumptions.

*Learning by observation is one the main parts of complex socio-economic problem-solving.*

To begin to solve a difficult socio-economic problem, we need to *understand the problem pattern*. For example, we need to understand and to know how the different social, political, economic, legal, technological and strategic issues are fit together or with each other. This was explained in the book of Integrated Lines of (Buheji, 2013). The other important thing we need is to see the big picture related to this problem. This actually would help us see things that others do not recognise and to build connections in the problem that perhaps is not obvious.

Differentiated learning help to build the spirit of persistence which comes after allowing our brain to access everything that might be useful in solving the socio-economic problem. For



example, *questioning with curiosity can be the cues which point us in the right direction* and this is the best way forward. We need to *do this over and over again until the process becomes subconscious* and this allows us to solve the problem much more faster than the average person.

The more we handle problems, the more we'll gain the differentiated learning that helps us to build persistent questions as what adds value and how it is created. This would help us to better identify the root causes of the problems, what an "ideal" process looks like, how can we make things easy and intuitive. In such a setting we could ask in all socio-economic problems questions as 'what are we trying to improve?' Or 'what are the causes that are preventing us from meeting our targets?', in order to build up better learning cycles that can lead to a better socio-economic outcome. To sustain the differentiated learning culture part of our inspiration engineering, we advise also that "project closure techniques" be used to ensure accumulation of differentiated learning experience.

In order to ensure the differentiated learning for any socio-economic problem solving, "project closure" is highly recommended for every problem. The project closure helps us to learn first the types of problems that are linked to the outcome and those which create a good reference of what we call 'one-point lesson'. i.e. The project closure gives a good showcase of the best practices reference that can be used for illustration and teaching in the community, or among the socio-economic problem stakeholders. The "project closure materials" can be an inspiring source for comprehensive case study publication(s) that touch the heart, the mind and excites the spirit when it is covered with its differentiate strong learning content.

Every socio-economic problem should have a “project closure” where it is ensured that the “measured outcome” of the community project impact is appropriately linked to the direct measure of the problem. This would ensure a differentiated closed-loop learning cycle that sustains the socio-economic outcomes. The closed-loop learning cycle helps us to understand how to manage the roadblock of the primary learning styles. Therefore, during a socio-economic problem analysis, we need to go through the learning styles inventory to find out which style is most suitable.

## Resilience Learning and Problem-solving

In certain socio-economic problems, we can *foster active learning*, and improve the resilience learning. Resilience learning is developed when we *confront the people with problems* and then stimulate the *development of their deep learning*. Such resilience learning helps to *build lifelong learning* by making the problem solver *strive to solve a specific socio-economic problem*, or assuming the responsibility for tackling it. Resilience learning make the problem solver look for solutions based on the realised life situations. *This type of problem-solving learning requires the problem solver to do investigations, explorations and use discussion forums through collaborative field research.*

Resilience learning has a common advantage that makes people feel more challenged with significant problems and which would *make learning more profound and lasting*. The differentiation of resilience learning is that it doesn't focus on specifically defined solution, but it allows the problem investigator to look for knowledge acquisition and set up the most suitable problem communication. Almost 60% of the cases in Appendix (2) used resilience learning between the middle and end of the solution outcome journey.

*The consistency of selective observations helps to create new assumptions that lead to the construction of new behaviours and a newly developed attitudes. With the accumulation and interpolation of observations, we will increase the action of response and thus we would increase our ability to effectively reflect on the selected observations.*

Resilience learning builds confidence to take on the problem while also stretching to reach a new understanding. Resilience and the human spirit development occurs when the brain-level explanations are integrated with explanations analysis to produce a richer and more holistic understanding. Resilience learning develops a deeper understanding that will aid in *determining how and why we feel compelled to act on creative ideas.*

Resilient learning affects our approach to the different learning situations. The way we learn to be resilient during problem-solving help us to deal with ideas and with day-to-day situations while working in teams and managing conflicts.

Working in a non-formal, or even in a disruptive way, while solving the socio-economic problem brings in many development ideas and support more possibilities for social scientific research. *Non-formal learning* that comes from the attempts of solving the problem helps in building resilient learning and generates further ideas that can enable achievement of desired outcomes.

## **Cognitive Load and Opportunity Centred Problem-solving**

Cognitive load is about the *imaginative power* which help us to manage the different challenges and problems and

turn them into opportunities, in different ways. This type of imaginative power build more a life with purpose. It is a type of cognitive load that supports Einstein's conclusion that "imagination is everything. It is the preview of life's coming attractions."

One of the known sources of cognitive load comes from the *active field problem-solving*. Certainly, active problem-solving raises our capacity to *deal with the limitations of the working memory* when tackling the socio-economic problem. At certain times, we call the cognitive load as the 'countermeasure' practice.

*Managing the cognitive load*, through field learning that comes as a result of early learning; which helps the problem solver to *manage the huge amount of information*. The cognitive load could be managed through the *gradual introduction of problems opportunities*.

*The focus and mindfulness allow us to do more trial and error to get a variety of solutions while eliminating those that don't work.*

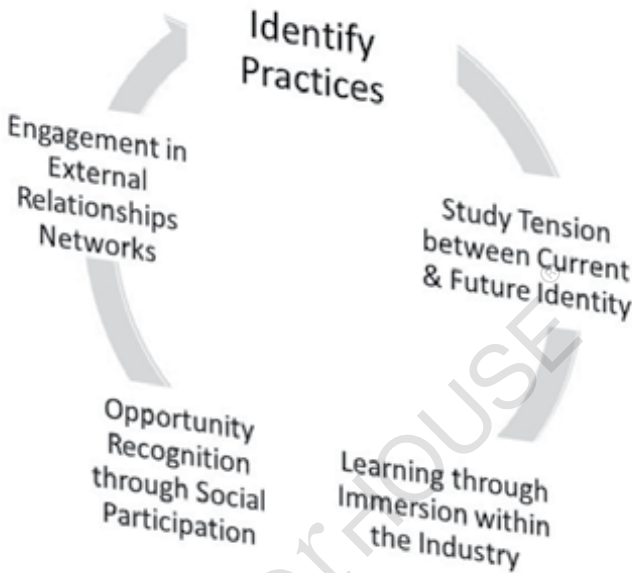
Opportunities are viewed broadly as the potentials for change, or means for improvement, or as advantages that can help us keep arising towards social learning. Therefore, one of the most important learning during a socio-economic solution journey is Opportunity Centred Learning (OCL). OCL help to develop the cognitive load, and thus, build-up the problem solver entrepreneurial capabilities, behaviours and practices. Figure (6-3) shows how the opportunities centred learning four variables would differentiate its impact on the socio-economy: exploring opportunities, creating opportunities, planning to realise opportunities and acting on opportunities.

Figure (6-3) Opportunities Centred Learning Four Variables.



An Opportunity Centred Learning (OCL) establish through *cognitive load behaviours that lead to innovative solutions to complex problems*. The OCL model emphasises on natural and social learning triggered by curiosity, desire and intentionality to accomplish a socio-economic outcome. Figure (6-4) shows also the importance of identifying practices during the socio-economic problem. This should help us to *study the tensions between current and future problems. Learning through immersion during the socio-economic problem-solving help to build opportunity recognition through social participation*.

Figure (6-4) Socio-Economic Problem Practice Identification



### **Synthesis of Problems through Learning Interventions**

As we start to develop the model solution we need to synthesis the socio-economic problem. Synthesis of a socioeconomic problem is very important for raising our ability to *generate ideas and to redefine problems effectively*. Synthesis helps us *generate solution insights through selective encoding of the problem opportunities in this stage called codification*. Then the further classification of the problem opportunities would help to establish proper comparisons which further push towards novel solutions.

The cognitive load during the socio-economic problem-solving help to *elevate our social interaction with mutual community* goals. OCL help people to work together to complete a problem task and understand the different roles and responsibilities embedded in the problem settings. The synthesis during OCL help to deal with the socio-economic problem complexity and ensures effective interpretations. Then, the cognitive load improves the creativity of the solution and overcome its constraints. Synthesis of the problem would bring learning interventions and possibilities same as shown in Figure (6-5) which identify the problem to be solved through learning that starts with visualisation and planning of the solutions. Then the potential solutions would be implemented to construct the problem learning models and test it.

Figure (6-5) Synthesis of the Problem Learning Interventions



The problem synthesis helps to increase the percentage of attendance to the complexity of the problem. *The synthesis helps to develop the learning interventions* shown in Figure (6-5) which *nurture the cognitive load*. The *cognitive load* helps then to improve the networking skills of the problem solver, thereby establishing rapport to learn and *appreciate the interdisciplinary*

*approaches*. Hence, socio-economic problem-solving synthesis help to improve the *productive and reproductive thinking* which create novel restructuring of the potential problem solution. The problem is restructured and the solution becomes clear. Once synthesised, the holistic approach used in problem synthesis increase the capacity of complex problem-solving since it enhances the *analytical abilities to associate the problem with its capacity*.

*The synthesis of the problem develops the learning interventions which nurture the cognitive load of the problem solver and his capacity more complicated issues.*

## Lessons from NASA Learning and Problem-solving Culture

The USA National Aeronautics and Space Administration (NASA) is considered to be one of the best models for problem-solving that is led by a learning organisation. NASA use problem-solving to develop the organisation expected delivery. The uniqueness of NASA problem-solving techniques is it is highly linked to its culture which was developed over more than half a century. NASA uses today challenges and competitions that help develop management of socio-economic problems and bring in innovative solutions to both its mission and the community.

NASA recognizes the *value of the public as a strategic partner* in addressing its challenging problems. By effectively harnessing the expertise of the community we can increase the *novelty of the solutions proposed*. NASA works on accelerating innovative approaches that would improve the methods of opportunities exploration. This helped NASA to come up with *transformative solutions* by offering non-traditional innovative cost-effective ways. NASA has an open communication system where exploring



opportunities would help to contribute to solving tough problems. Through this technique, NASA can challenge several unique problems and which lead to valuable outcomes.

NASA problem-solving competition celebrates the success of those teams that establish an ambitious goal without having to predict which team or approach are most likely to succeed. *The partnership of NASA problem-solving competition is based on a win-win where contracts and grants are awarded to partners based on proposals for current and future problem-solving ideas.* All the relations in the problem are evaluated based on proven outcomes. NASA found that through consistently keeping challenges spirit within the organisation environment, many *untapped potentials can deliver unexpected solutions to tough problems.*

The idea of NASA problem solution competition is to *inspire risk-taking by offering a playing field through credible mechanisms.* Challenges give entrepreneurs and innovators license to pursue an endorsed stretch goal through clear problem-solving protocols. These challenges increase the number of *minds tackling complex problems* in NASA surroundings, thus creating more unmatched breakthroughs. NASA knows that these breakthroughs come from multidiscipline approaches thus enhancing the return on capital employed.

NASA works based on a table that moves the partners in problems solving from the realisation stage till they are evaluated. NASA uses stages to help in problem identification and management. Table (6-1) shows stages of NASA problem-solving through: *Problem acceptance, interaction with the problem, problem solutions activity and problem emotions or problem intensity.* **Case (45) Sub-case (7)** that focus on bridging the gap between academic social work and social studies schools with the realised community problems; is selected to operationalise the table and understand its usability.

Table (6-1) Stages of NASA problem-solving

Stage	Stage Constructs	Realise	Evaluate
Problem Acceptance	1-Motivating Aspirations & 2-Desires 3-Thought 4-Anticipation	No Life Long Learning Programs that help people in the community to manage socio-economic problems.	
Interaction with the Problem	1-Speech 2-Action 3-Approach Response 4-Sensory Reception	Integrate the social workers with problems of: poverty, youth quality of life, youth migration, gambling, etc.	
Problem Solutions Activity	Behaviour with Problem	How the social workers are getting people and students involved and modelling potential solutions that come from within the community.	
Problem Emotions/ Problem Intensity	Immediate Reflexivity	Measure empathy with the selected socio-economic problem.	

## **Curiosity and the Productivity of Problem Solutions**

Throughout this chapter, we've shown how the different mechanisms of curiosity and learning have a great influence on

the productivity of socio-economic issue. The outcome from problem-solving journey creates multi-influence effectiveness that addresses the socio-economic needs, or the realised functional outcomes. In order to create a unique Inspiring Productive (IP) outcome, we need to have the outcome sustainable compared to the efforts and the input invested in it. This is represented in the following formula:

**(IP) = OC / I**, where OC = Outcome of the socio-economic solution that brings in Legacy, and I= Input and efforts put in the socio-economic issue or its conditions.

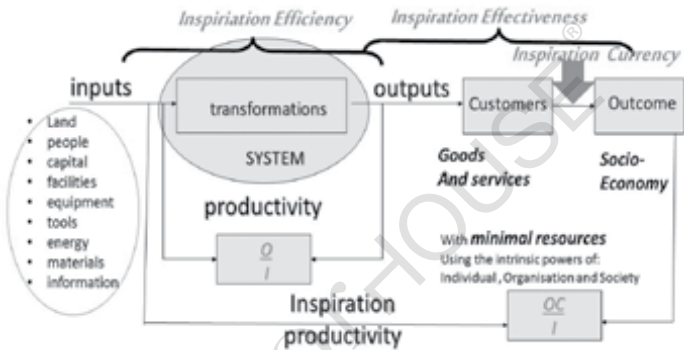
*Focused observations repetitions help to create "Appreciative Enquiry" that leads to more reflections and positive insights.*

Taking the formula of IP into consideration during the attempts of solving a socio-economic problem helps in shifting both organisations and communities from growth productivity (i.e. productivity that improve with resources and projects) to development based productivity (i.e. productivity that improve with challenges and selective 'pull-thinking' influence) which comes from the type of problem constructs. For example, in the case of Social Insurance Authority (SIA), *Case (25)*, mentioned in Table (A-2-1) of Appendix (2).

The problem solution on *Case (25)* transform the services of the SIA towards creating an outcome and an environment that would ensure that the lower salary pension scale participants are more prepared for entrepreneurship environment, and before retirement. This means that SIA through effective incubation and acceleration programs can help to shift the IP from being just focusing on improving the services of the pension fund, in general, or raising the minimum wages of those on pension, or transferring them social development department. The new

productive solution would ensure the level of productivity (IP) of this SIA would reach the essence of its role, that is to ensure the best quality of life for its stakeholders. Figure (6-6) illustrate the difference between output and outcome which can be differentiated when starting to observe the problem and its socio-economic impact, taking the SIA case as an example.

Figure (6-6) Inspiration Productivity Concept



This type of socio-economic productivity formula (IP) found as per Buheji and Thomas (2016) is expected in any problem solution that targets to create realised development in the community. It is a process as shown in Figure (6-6) that combines ‘experiential learning’, or ‘learning by observation’ and/or ‘learning by doing’ to make a transformation from the actual- to the desired-situation.

The other uniqueness of this IP formula, once it is used in socio-economic problem-solving, is its ability to make us focused on outcomes and generating solutions using intrinsic resources through focusing on:

- Reduction of the resources consumed in relevance to the outcome (legacy) achieved.

*Mohamed Buheji*

- On the input side of the system in relevance to the level of outcome achieved.
- In the measures of what the system sets out to accomplish (towards specific outcome) with what was actually accomplished; i.e. monitoring of plan vs. actual.

Finally, the most unique thing about the IP formula is that it is simple and keep you focused on the final problem solving journey, with high curiosity.

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## ***Problem-solving Lab- Case SIX*** ***Berber Villages Eco Tourism***

### **A) Summary of the Socio-economic Problem Story**

Ahmed, Sumaya and Latifa are just a few of the many smiling faces of young children whom would run after your vehicle, to sell you small souvenirs hand-crafted by the traditional Berber villager farmers, in the Atlas Mountains near the city of Marrakesh in Morocco.

Driving through real villages you would see the passing farmers on the donkeys and mules. The kids would be playing around the falling water coming from the mountains while you would smell the steam from food cooking in clay ovens. However, after taking a closer look at the Berber village quality of life, one would notice that not all the children go to school, specially girls over the age of thirteen. The community have civil societies to support families in poverty or during a natural crisis, with many deteriorating health conditions specially for the elderly. The village has very few business developments and recreation activities. Despite the great collaborative economy spirit, the families' natural assets are not utilised.

You might notice many tourist activities around the villages spread throughout the mountains while enjoying the waterfalls after a lovely hike of breath-taking views. However, you can't see well-structured eco-projects that would enhance the families lives while the visitors would enjoy the whole day in the villages; including eating near the springs and getting coffee with good refreshments and a delicious lunch. The amazing views of the icy cold waterfalls with the welcoming villages seen are not well-utilised.

The villages have highly demanded products as sheep wool, honey soap and Argan oil, however these are not well packaged in order to encourage the tourist to buy them as gifts. There are lots of lost opportunities for creating comprehensive services that would raise the Berber families from poverty and poor quality of life.

The dreams of many of the Berber families are to have their youth getting employed in the city, so that they support their families in the mountains; besides to have some of the city services like schools, clinics and roads inside the village.

### **B) The Classical Solution to such Problem**

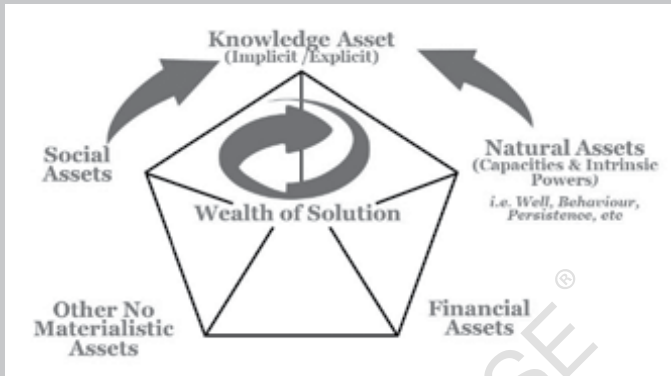
Enhance the villagers training in eco-tourism while establishing tourist offices which could be provided by the government. The sales offices might be certified by the government where the villagers' residents would be working in it. Raise funds to ensure more villagers quality of life from Moroccan NGO's.

### **C) The Inspiring Socio-Economic Solution**

#### *1- Understanding the Problem Vectors*

The Berber families were assessed for their current wealth of opportunities. The purpose was to see how to improve Berber families 'quality of life' and move them out of poverty. The village families were assessed for their Knowledge Assets (both the implicit and the explicit), the Social Assets and Natural Assets (the capacities and the intrinsic powers) that bring in behaviours as kindness, persistence, etc. Besides other financial assets and other non-materialistic assets were identified as per Figure (6-7).

Figure (6-7) Vectors of Berber Families Village Assets Assessed



## 2- The solution Proposed

The socio-economic solution would start by increasing the independence of the Berber families by assessing their potential assets and Goodwill. All the natural assets, physical assets, social assets, intellectual assets and type of financial assets would be evaluated for the main villages towards the Atlas Mountains. For example, one of the most unique assets of the Berber are sharing economy practices between the village families, where you'll notice that many would share for example an electric equipment or large stove or even bed mattress, etc.

Once the assets are identified, each village would be differentiated in its competence from others. i.e. one area would be unique for Argan Oil, the other would be differentiated by its clay, the third by its metal souvenirs, etc. All the villages would have well-established facilities for overnight sleep or day resting. The shops would be managed by the societies of the villagers but under government control and standards. All the boys and girls would only work during the school break. The visitors would experience the Berber culture by visiting open-house days.



Government certified jewellery, sheep wool, original Argan Oil, High-quality honey, unique soap, etc. would be available with good packaging carrying the name of the Berber NGO society or the village name.

### *3- Outcome of Problem Solution*

Ensure better quality of life status for the Berber villages with a higher margin of profit. More dignity jobs and eco-entrepreneurship opportunities. More practices that would ensure effective education while optimising the assets of the Berber villages. The solution would ensure that we create a real eco sharing economy models.

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# CH 7 – EXCITE

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& Problem-solving* ©

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## Inspiration as a Goal for Re-Inventing Our Lives

One of our problems today is that we don't see that our community problems as God gift to us, to bring in new inspiration to the world and to the people around us. Problems open inspiration possibilities, as it raises the engagement with the community through the process of reaching a right solution. Properly framing the problem challenge is critical to its sources of inspiration and its success.

In order to manage problem ambiguity, we need to see it as a source of inspiration. This means we need to see *how this problem would lead to ultimate impact, or allow for a variety of solutions, or would take into account the context or outcome targeted*. Some problems bring in automatic thinking that occurs as a matter of habit and requires little efforts to be solved. Other problems are solved once *we investigate the little existing biases that prevent the optimal problem outcomes*. However, as an experienced practitioner and socio-economic problems investigator, who claims to be an expert in complex-inspiring problems; one could confirm that *sources of inspiration occur when we are faced with problems that trigger our long-term thinking and direct our life goals*. Such inspiring problems requires *intentional efforts* which starts with analysis of existing biases that leads to more optimal outcomes, or to better choices and decisions.

A socio-economic problem can be a source of inspiration for the problem investigator and the community if it challenges the current mindset and leads to *utilisation of hidden intrinsic powers and trigger both persistence and perseverance*. If we manage to engage the community, or start to *utilise empathetic thinking* in tackling the problem, our ability to capture opportunities would improve, as shown in the upper part of Figure (7-1). This figure, in a nutshell, explains *how engineering our inspiration can help solve a problem* and vice versa, i.e. *how a problem can trigger the inspiration engineering constructs* for those engaged and strive to explore its solutions.

*With observations, we build holistic feelings that move, or motivate the powers of the mind, spirit, heart and to deal with the physical status of the problem investigated.*

Experience and review for all complex socio-economic problems show that communities, organisations and even individuals would be more ready to tackle a socio-economic issue once they are empathetically engaged with a problem and have started to exploit and explore the opportunities of problem, as shown in Figure (7-1). In fact, *tackling and empathetically engaging with community issues as issues of poverty, inequality, unemployment, security, quality of life, migration, etc.; found to be highly correlated with the life purpose-fullness.* Vice versa, when we use our intrinsic abilities, i.e. use of visualisation, innovation, selective creative pull thinking, etc. we are actually *raising our capacity and desire, as part of our wellbeing, to tackle more community issues.* Figure (7-1) illustrate all this interrelated mechanism that make the engagement with socio-economic problems become a source of inspiration for individuals, organisations and communities.

Figure (7-1) Mechanism of How Socio-Economic Problems become a Source of Inspiration.



The European Commission report of (2011) emphasises the need for new economic resources that address the *rising demands of human welfare needs, be it health care, education, resource efficiency and environmental challenges*. Therefore, *through bringing in inspiration towards human welfare issues we can make more humans to be self-motivated and even more equipped to solve social, economic, political, technological and environmental problems*.

An inspiring problem-solving process starts with defining the issue of the problem and therefore generating ideas from that scope, followed by evaluating the problem situation and seeing the possible ideas. In order to inspire the model of the problem-solving process, we need to handle the mental blocks that face ideas and opportunity generation. The mental blocks are a collection of attitudes that prevent us from thinking of something different. The problem is not that there are problems, as Theodore Rubin quoted, but rather that the problem is that we are expecting otherwise and *thinking that having problems is a problem*. Thus, *we need to inspire the way we think and handle the problems before we think about solving them*.

In the Handbook of Inspiration Economy, we've shown how inspiration to the problem-solving need to shift from the school of the few experts, to the general public if we are to face the complex problems of unemployment, or to manage the alleviated level of poverty. Managing such problems should be based on collaborative thinking that shifts the community leaders mindset from a school of scarcity thinking to abundance thinking.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

## The Concept of Problem-solving Inspiration Labs

The purpose of problem-solving inspiration labs is to create an analytical thinking process and to use observation to solve socio-economic problem. The labs help to develop the quality or state of being certain for the possibilities of specific solution on the basis of evidence collected from the field. The labs enable us deeply observe, without controlled theories, and thus, draw inferences and analogies from the observations performed. This helps us to approach any case with an absolutely blank mind. Thus, we can build clear and reliable theories that will suit the facts.

*A problem statement is very important in problem-solving labs even though we might not tackle real problems, but challenges.* For example, if we take the problem of NCD's, which was regarding reducing the country's epidemic that is prone to reach 90% of the population during their life. The problem statement for the lab is beyond simply saying that the health centre needs to be managed differently to increase the capture of NCDs. However, the lab is focused on 'what are the opportunities that exist for reducing population risk of NCDs from 90% to 50% in 5 years and without extra resources?'

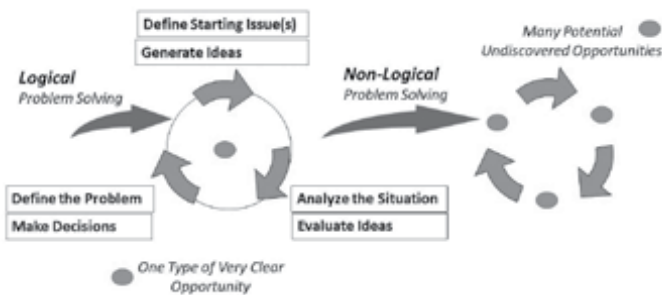
Problem-solving inspiration labs use disruptive problem-solving approaches that are far away from the normal problem-solving tools, such as the cause and effect technique. The uniqueness of problem-solving labs is that they do not depend on pre-requisite expertise or knowledge about the problem. This is because we believe that knowledge or expertise can help only in solving normal, non-chronic and non-complex problems.

Since any problem-solving activity is surrounded by eight main constraints, the *labs help to integrate the essence of the problem with the content of the problem while focusing on its learning objectives, resources and its expected outcome.* During the problem-solving lab, people would look for the story to find out the essence of the socio-economic problem and the series of stories it could create.

*By specifying the types of explorations and observations we could identify and specify the type of 'problem active attempts' and the type of 'problem repeated practices'.*

*In solving complex problems, the grand thing is to be able to reason backwards. In doing so, we can synthesise the problem and make analogies with the different things we do. Synthetic thinking during the lab helps us to see the possible opportunity to develop or see possible solutions. For example, as in the issue that targeted raising the availability of emergency patients' beds, Case (7) sub-case (1), the issue of stagnant Accident and Emergency Department, synthetic thinking made us start from the prepared space for emergency case starting from the wards and go back to the A&E. Synthetic divergent thinking has been found to be weak in estimating the root causes of a complex problem because such thinking is usually trying to search systematically for the solution. For complex problems, the labs help to solve problems using 'backward convergent thinking', thus, we can move the focus from the effect to the type of causality. In order to discover many hidden and potential opportunities, the labs help to see the non-logical problem-solving techniques as shown in Figure (7-2).*

Figure (7-2) Potential Problem-solving Logical and Non-Logical Opportunities



Through labs, we can see invariably where there are dozens, hundreds, or even thousands of possible causes for any problem. But just as a certainty, no more than three factors are responsible for 90-100% of the problem. These can be discovered by the process of observing, deducting and then building knowledge about areas of opportunity.

## **Divergent and Convergent Thinking and Inspiration Labs**

The psychologist Guilford was the first to coin the terms convergent and divergent thinking in 1956. In problem-solving labs, we depend on these two types of thinking to *create the socio-economic visualisation*. These two thinking types are *capable of differentiating* each individual decision and inspiration while helping us to *discover the big picture*.

If we use convergent thinking, which is a cognitive process (a mode of critical thinking), the labs would help us to find only one single correct answer to a problem. While if we use the opposite, i.e. *divergent thinking*, then we could generate many unique, creative responses to a single question or problem. Inspiration problem-solving labs depend a lot on *divergent thinking where we look for a variety of potential solutions (called opportunities) for the same challenge (called problem)*.

We consider that divergent thinking is the most important target of the labs, as it creates a thought process that generates inspirational and creative ideas by *pushing the mind and spirit to explore many possible solutions*. While convergent thinking follows a particular set of logical steps to arrive at one solution, *divergent thinking used in the labs typically occurs in a non-linear and spontaneous cognitive process*. With such divergent thinking,



many possible solutions are explored in a short amount of time, and unexpected connections are drawn. After the process of divergent thinking has been completed, ideas and information are organised and structured using convergent thinking. Thus, innovation funnelling, as a *convergent thinking process*, can come in the lab after the divergent thinking which enlarges the sources of the solution relevant opportunities.

In developing individuals, society, organisations and governments, divergent thinking through problem-solving lab helps to enhance the ability to retrieve and connect 'disparate concepts'. These 'disparate concepts' are connected in our brains in 'semantic networks'. *Through the persistence developed by the labs, we can build unstructured solutions with an ability to see the unfamiliar.* Figure (7-3) shows both divergent and convergent thinking processes in relation to an inspiring stimulus that help bring the best possible socio-economic outcome.

Figure (7-3) Divergent and convergent thinking in reaction to an inspiring stimulus



Therefore, the problem-solving labs can increase the opportunities for obtaining stimuli, or undertaking more focused observations. These observations trigger divergent thinking and could help to build attitudes that promote focused unstructured solutions.

These attitudes also help to build a sense of curiosity, persistence and a willingness to take risks.

Scientists and psychologists now emphasise that activities which promote divergent thinking are discovered more every day. It is these types of activities that create, or help people mitigate challenges, overcome failures, break their fear of taking risks, build persistent personalities, and have a strong ability to learn and adapt. Divergent thinking activities, therefore, can be *operationalised through visualisation, meditation, accumulated reflections based on observation, deep dialogues, mind mapping, research, free writing or artwork*. Thus, by having divergent thinking activities through problem-solving labs, we can select or focus on a particular socio-economic topic and then create a stream of consciousness about it.

*Having an independent and opportunity-driven mindset help to build autonomous organisation that have an increasing 'capacity to learn'.*

Divergent thinking is relevant to common sense thinking of childhood before joining school; at this time, we had many alternative ways to play and see solutions in life. Divergent thinking for any activity requires conceptualisation and operation. Vosburg (1998) explored how to improve divergent thinking which benefits the problem-solving lab deliverables and helps us to move beyond the quality of ideas. Divergent thinking has been found to generate more ideas and creative solutions. The problem-solving in this type of thinking not only goes beyond producing the “right” answer, but *unleashes unconventional approaches to problems*.

Convergent thinking plays an important role in *creating better consistency and reliability when tackling any problem*. For problem-solving labs this type of thinking produces standardised life

exams. While divergent thinking uses lifelong learning practices that open up a variety of potential unseen opportunities.

## Style of Problem-solving in Inspiration Labs

Inspiration-based problem-solving labs are about creating stratified solutions to different complex problems (or challenges) that face society or that affect the socio-economy. The first technique used in the lab is called taxonomy where we start to solve the problem after defining 'what' is the problem. Then the lab would encourage the investment of time and efforts to improve our understanding of the definition of the problem along why it exists and how it is related to our life purposefulness.

Tackling challenges in a problem-solving lab start with *raising our ability to see the problem from different perspectives*, then defining the problem or challenge. In a problem-solving lab, the challenge is 'to know what the challenge is'. *What most of us fail to realise the quality of the solutions we come up with what will be the outcome while we starting to understand the challenge. I.e. the challenges in the inspiration labs would be in direct proportion to the quality of the description of the problem we are trying to solve.* If we do this, not only will our solutions be more abundant and of higher quality, but will also be achieved much more easily. Most importantly, we will have the confidence to tackle a worthwhile problem.

The labs require that all our approaches be based on observations, then we would get to a stage of absorption that lead us to start reflecting on the opportunities of the problem. While tackling challenging problems, the lab participants are 'pushed' to learn what is most possible. The problem-solving labs target the creation of models that encourage the rest of the community to apply the new knowledge in an effective way. Thus, the process

of the problem-solving lab helps to stimulate and structure ideas towards the real solutions.

Inspiration engineering generate problem solving style that sees any problem as a challenging game that can be enjoyed and tackled into small pieces. In the same way, when we can explore a problem laterally, such as by playing with words or challenging assumptions we can minimise wasting the time and the effort on unnecessary details by making the mindset appreciate the problem solutions from different perspectives.

## **Rephrasing the Problem and Inspiration Engineering**

Re-phrasing any problem requires us to control our emotions in order to be able to think clearly while trying not to let our emotions get in the way. In problem-solving labs, we try to see the challenges and the problem by rephrasing them, seeing them from different perspectives. This enhances our ability to see all the potential opportunities.

To show the importance of rephrasing a socio-economic problem let us take the example of the Education Quality Assurance, listed as *Case (15)* in Appendix (2). If we say that the problem is that we want to enhance the assurance of quality in education, then this won't make the problem a socio-economic problem. However, if we focus on motivating the quality of the education being offered in each school and to each student and by the different means, then we have a socio-economic issue that need to be tackled. Hence, instead of attempting to improve the curriculum of the education system only, we turning the focus on what the community needs from the quality of the education. Hence, the socio-economic problem-solving labs go further in

rephrasing the issue as failing to assure the community of what are curriculums pathways, or even more important, what are the types of influences (i.e. types of curricula influence) on the sustenance of students' preparedness or competitiveness'?

Therefore, rephrasing of the problem helps to set new questions to show the type of challenge the Quality Assurance Authority is going through. It is really an attempt to make the authority responsible to embed knowledge within the students, or even accountable in collaborating in building human beings who are competent to use knowledge, or even make them lifelong learners.

In another example, the rephrasing of the socio-economic issue in the increase of the numbers of suicides. Rephrase the problem of this social health and quality of life related problem made us go deeper of how suicide occurs, and then investigate the types of diseases or psychological/psychiatric problems that lead to suicides. Thus the rephrase lead to seeing the socio-economic issue need to be tackled and managed properly is 'anxiety'. This is listed in *Case (10)*. Similarly, with regard to rephrasing the cases relevant to primary healthcare services, in *Case (6)* and sub-case (1), where instead of trying to enhance the treatment of Non-Communicable Diseases (NCDs). The rephrasing of the NCDs problem helped us in focusing on how we could improve the 'early discovery' of NCDs. Thus, we would not need to improve more treatments, but instead, enhance our capacity to discover those with risk of NCDs and diagnose them.

Another example of rephrasing the problem can be seen in the problem of increasing risks of fire safety accidents in high rise buildings which happened in many countries in the last few years, as listed in *Case (32)* in sub-case (20). After rephrasing the problem, as per Figure (5-3), the problem turned to be about

the capacity of managing the self-dependency safety in high rise buildings. As the demands for high rise buildings are increasing in many countries including in countries that had many similar recent accidents as in London and Dubai; we didn't see efforts in raising the capacity of the Building tenants to deal with fire accidents. The target thus shifted from the need to increase, or stretch the Fire Inspection Officers, to re-defining their roles. Part of the re-phrasing of the problem is to emphasis the new role of the fire officers from just doing inspection, to being more accountable for training the building safety officers and their voluntary teams.

*The exercise of streamlining a socio-economic problem help to trigger more excitement to the 'frontal lobe of the brain' through seeing the opportunity from different perspectives thus exploiting more hidden opportunities from the problem opportunities itself.*

Figure (7-4) represent how the change in roles, responsibilities and mindset of the 'Civil Defence Inspectors' have shifted from 'inspection-focused' to 'coaching-focused' in self-safety, and in accordance to the rating of the quality of the residential buildings.

Figure (7-4) Enhancing High Rising Buildings Safety



## Mindfulness Focus in Problem-solving Inspiration Labs

*Mindfulness means focusing on only one problem or activity at a time. We usually refer to this in the slogan: "Take one, do one, finish one". However, it is worth saying that what we mean and need from mindfulness in problem-solving labs is not the opposite of multi-tasking. As many scientists can confirm today, our minds cannot effectively control two things at the same time. With mindfulness, we just stop our mind from switching quickly from one task to the next, thus minimising its potential to become unfocused (Konnikova, 2016).*

Focus is about the ability that create a differentiation for the problem solver. The ability to focus means we have the ability to have full attention while improving the saliency of information; besides the ability to create decisions without biases. With focus, we can have full mindfulness with control on emotions. Mindfulness requires thinking and behaviour towards dealing with problems correctly in order to accurately addressing its needs. Through convergent thinking, we create a focus in mind to find a particular answer to a certain problem. With divergent thinking, we can help the mind to generate as many possible answers to the problem, as much as we can.

During problem-solving lab, we create incubation to leave the problem for a time, allowing the mind to work on that problem without conscious efforts, thus leading to different insights. The focus and mindfulness allow us to do more trial and error to get a variety of solutions while eliminating those that don't work.

Focus is very important for the inspiration lab journey as, without focus, we cannot find opportunities and we will not be able to tackle complex and chronic issues. Early focus is highly essential

for inspiration engineering since it helps us to select the most appropriate and relevant problem. Through focus we will be self-reinforcing. Mindfulness also helps during the labs to filter out irrelevant distractions, thus keeping a space for our brain to monitor the environment, both externally and internally.

The role of the Inspiration Engineer is to create models that would help to develop thinking which leads to focused problem-solving. *The problem solver would monitor the learning after probing or challenging the targeted community ability to discover the opportunities in specific areas relevant to the essence of their existence, survival or development.* Usually, the business model is one of the early tools to get the stakeholders of the lab engaged and focused. The Inspiration engineer would focus on monitoring/ adjusting the levels of challenge and managing the group dynamics as a way of keeping the insights and the process of exploration going on.

*Combination of opportunities is used as a streamlining method where the unrelated opportunities explored can help to bring in new ideas.*

When we focus on the process of possible concepts or solutions, we also need to consider other factors which affect them. This means that focusing on one activity or thought at a time will help us notice or remember details in our work, the things we have read, and the people we have talked to. This kind of focus will also make us better attuned to how we are feeling physically and emotionally.

With focus, the problem solvers would have more accountable and normative decisions about the socio-economic problem that reflect their identity with clear interventions. With focused field experiments, the problem solver can determine how each mechanism is effective in certain circumstances and allow for better prediction and optimization.



## The Art of Problem Reasoning in Inspiration Engineering

The economist Frederic Bastiat (1825) said that there is only one difference between a bad economist and a good one: the bad economist confines himself to the visible effect; *the good economist takes into account both the effect that can be seen and those effects that must be foreseen*. Art of reasoning is a main technique in inspiration engineering and problem-solving. *With reasoning, we can correlate the problem opportunities to many thought-provoking ideas and bundle them together.*

Loud reasoning practices are what we remember from the unique abilities of Sherlock Holmes, where his *curiosity always leads him to explicitly visualise the problem*, then find evidence and show reasoning examples. This type of reasoning led him to be *unique in his ability to generalise, apply, analogies and represent different solutions in totally different ways*. Holmes managed to deal with reasoning under problem uncertainties in a context that investigate the knowledge needed for the problem through what is called 'abductive reasoning' strategy. This is a form of critical thinking where the key constructs of the problem first go through pattern recognition and plausible reasoning.

Inspiration Engineering is about abductive reasoning or inference explanation where a set of given socio-economic data are extrapolated through reverse thinking, in order to infer a hypothesis that serves as an explanation for that data. For example, when we notice that the streets in the hot dry country are wet. In searching for an explanation for this fact, the most likely hypothesis is that either public service municipality keep the roads wet to ease the dry heat, or there is a hidden unseen groundwater leakage, this is part of the reasoning followed to investigate *Cases (5) and (23)*. Such reasoning can be seen clearly

in the cases discussed at the end of each chapter and there is a specific case about the elimination of water leakage.

Abductive reasoning, during the problem-solving labs, is thought to trigger the neuro-transmitters in the mind that help to create waves of inspiration and then lead to another further attempt to generate an explanation of the phenomena. When thinking of reasoning in inspiration engineering we move from collecting observations about the problem under study to the best explanation of those observations. Most of the labs in Appendix (2) used abductive reasoning in order to create the best explanations.

As can be seen from the many socio-economic cases discussed throughout this Handbook, *the problem solver usually would try to generate general explanations of a socio-economic phenomenon to meet certain conditions and then would try to find inferences to the best of these explanations*. Hence, the handbook shows us how to *move from some observations to the best explanation of those observations*. For example, observing the repeated unconformable nasty smell of the sewage system blockage, moved all the actions in the sub-cases of *Case (24)* to abductive reasoning. This abduce simply simulate or image that the sewage system as capable for complaining to us about either the quality of installations, maintenance specifications and miss-uses of the beneficiaries. This abductive reasoning shift the blame on the blockages of the sewage system from the emergency-response team to the overall variables that control the performance or the quality of sewage network.

## **Constraints of Problem-solving Labs**

The stages of problem-solving labs start with general orientation with problem and definition for its formulation, then alternative solutions start to be generated. However, it was debated that we

*can't really formulate the problem characteristics sometime or even generalise it before we take it through trial and error, where people would be able to try a variety of solutions and eliminating those that don't work without fear.*

Constraints and challenges of the mindset define our tendencies of how we approach the problems since the habits control our perception or thought. After visualizing the problem, in the lab, we start dividing it into constructs and we work our way backwards. The purpose of this whole process is not to solve the problem, but rather to use it to build from it an insight, or find the blind-spots that we couldn't see clearly. This creates inspiration that moves our minds from the 'stage of observation' to 'stage of absorption' where we would be ready to realize the solution that can create real development. Therefore, one could see that insights come in literature only when the process of the problem suddenly moves from not knowing 'how to solve' to 'how to solve it'.

*Problem-solving labs not only try to solve the problem permanently, but rather looks for opportunities from inside each problem and what type of socio-economic characteristics it carries.* The search for the opportunity deep inside the problem, is challenging, but it is a source of inspiration currency and many insights. Insights or development solutions might not appear until all the data are gathered, analysed and deeply interpolated.

In any problem-solving exercise, there would be always constraints relevant to time, cost and most important of all the mindset, or the psychological preparedness; specially during problem handling. Since the solution has to meet the development goals, or create a restoration, we need to restate the problem before we go for identifying alternative solutions. All alternative solutions should not be eliminated until they are tested. Then finally, the solutions should be tested against the desired results.

*Once we start observation of the socio-economic issues, both the 'frontal lobe' and 'pre-frontal lobe' in the brain would be excited through the processes of attention and concentration.*

*Our understanding of a problem depends a lot on the way we see and visualise opportunities. The way our mindset see opportunities help us to discover 'hidden areas of thoughts' and open for us 'unforeseen opportunities' which are continually around us. Therefore, Sun Tzu clearly has seen that real victory comes from finding opportunities in the problems. This change in the mindset of seeing every problem as an opportunity raise our appreciation of problems as a gift for new discovery.*

One of the challenges of the lab is that it works on generating lots of ideas and combining existing ideas in different ways and new purposes. Hence, this constrain can be a source of selecting unique and useful ideas and solutions. The continuous handling of different problems gives us the capacity to join the irrelevant elements of a problem. Actually this constraint is a source of innovation, as most of the recent discoveries come from more than one discipline and create a disruption in product or service pathways. However, in order to enhance the discovery of opportunities, we can redesign the words, meanings, and definitions or use metaphors.

## **Problem Statement in Inspiration Problem-solving Labs**

A longitudinal review of the experiences with more than sixty problem-solving labs solved in more than 29 different business sectors, were set in Table (7-1), in Appendix (2). These problems or challenges were encountered specifically during the years 2012 till 2018, and as part of problem-solving labs projects. The table

shows the type and level of ‘problem-statements’ utilised to create the necessary solutions to the socio-economic issues identified. The table is meant to show how problem solutions and outcomes are retrieved from investigating the type of problem-statement used for each challenge. Also, the study of the table targeted to explore whether creating inspirational solutions to real-life challenging problems is related to the precise problem-solving outcomes.

Problem-solving labs were introduced as a technique for complex life problem-solving in early 2010 where the first paper was published with title ‘reporting success stories’. Since then, lots of books and papers have been published in this area to cover the development and maturity of ‘inspiration problem-solving labs’. Many of the techniques were developed by field testing and under the challenge of the field pressure, including the issue related to techniques on problem statement. Table (7-1) helps to *review the scarcity of using certain level of problem statement, with the aim to investigate how we can improve the capacity for the final statement utilization in the future.* So far, usually the analysis for the problem statement would be reflected through a detailed discussion that lead the clear outcome plan.

Table (7-1) Type of Problems Solved in different scopes in relevance to Problem Statement

<b>Type of Business</b>	<b>Summary of Type of Inspiring Projects / Models</b>	<b>Type of Problem Statement</b>
1)Education	1- <i>Shifting from Competitive Schools Focus towards Inspiring Schools</i> 2- <i>Discovering the type of inspired students vs. gifted, competitive, innovative and creative students</i>	<u>Main Techniques:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> </ul>

Type of Business	Summary of Type of Inspiring Projects / Models	Type of Problem Statement
	3- Tracking of the <i>inspired students after graduation.</i> 4- Building <i>Curriculums that supports students inspiration</i>	<ul style="list-style-type: none"> <li>• Reflect on the critical blind-spot</li> <li>• Internal codification</li> </ul>
2)Social Development	1- Improving the <i>Quality of Life</i> of the Bahraini Elderly/ Geriatric Care Homes through inspiring their intrinsic powers ability 2- Inspiring the <i>capacity of Productive Families Program</i> to be more self-independent and attractive for more family members to join as employees/ owners 3- Improving the <i>Quality of MicroStart Families</i> 4- Easing the process of home care 5- Supporting <i>Working from Home Program</i> 6- Revaluating the <i>Capability of Social Allowance Entitlement</i> 7- Enhancing the products quality and <i>competitiveness of the Retired &amp; the Disabled</i>	<u>Main Techniques:</u> <ul style="list-style-type: none"> <li>• Pull Thinking Stratification</li> <li>• Internal Codification in relevance to types of Quality of Life Practices</li> <li>• External Classification of potential market penetration</li> <li>• Combination of Solutions</li> </ul>
3)Electricity Services	Improving the <i>speed of electricity connections</i> services 9 times faster.	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Reflect on the critical blind-spot</li> </ul>

Type of Business	Summary of Type of Inspiring Projects / Models	Type of Problem Statement
4)Police	1- Enhancing the ability to <i>trace Drug Trafficking and early detection</i> 2- Enhancing the role of <i>Prevention of Community Complains through Society Police</i> 3- Minising the <i>Thefts incidents in Jewelry Shops</i> 4- Miniming the <i>threat of Illegal labors</i> 5- Minimising <i>Families Disputes transfer to legal courts</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Pull Thinking Stratification</li> <li>• Internal Codification</li> <li>• External Classification</li> <li>• Combination of Solutions</li> </ul>
5)Passports	1- Raising the <i>speed of finishing Visa's</i> 2- Ensuring <i>speed &amp; customer services at Arrivals</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Reflect on the critical blind-spot</li> </ul>
6)Traffic Directorate	1- Enhancing the <i>appreciation of Traffic Light Violation Fines Services</i> 2- Improving <i>the accuracy of Traffic Accidents Investigation</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
7)Land Surveys	Speeding up <i>land Surveys Services</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> </ul>

Type of Business	Summary of Type of Inspiring Projects / Models	Type of Problem Statement
		<ul style="list-style-type: none"> <li>• Reflect on the critical blind-spot</li> </ul>
8)Foreign Affairs	1-Ensuring the <i>economic role of Embassies</i> 2-Enhancement of <i>Knowledge Sharing among Ambassadors &amp; Embassy Staff</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
9)Chamber of Commerce	Re-Establishing <i>competitiveness for Unstable Businesses</i> through Business Model	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Systematic Exploration</li> <li>• Combination of Solutions</li> <li>• Integration of Opportunities</li> </ul>
10)Applied Science Colleges	Inspiring students to enhance their <i>contribution towards innovation</i> index by more focused projects	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Pull Thinking Stratification</li> <li>• Internal Codification</li> <li>• External Classification</li> </ul>
11)Industry Sector	1-Speed of <i>throughput of Environmental friendly industrial projects</i> that less dependent on depleting resources. 2-Enhancement of <i>Investment utilization</i> in the Industrial area through <i>re-design of space utilization.</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Pull Thinking Stratification</li> <li>• Internal Codification</li> <li>• External Classification</li> </ul>



<b>Type of Business</b>	<b>Summary of Type of Inspiring Projects / Models</b>	<b>Type of Problem Statement</b>
12) Commercial Sector	1- <i>Enhancement of CR registration</i> through inspiring the reality of ' <i>one stop shop</i> '. 2- <i>Improving the contribution of Microstate and Small Enterprises towards towards more profitability and enhancing its actual contribution to Bahraini labor Market.</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
13) Training & Development	<i>Transformation of training</i> to make it more focused on knowledge management than knowledge building only in the areas of ICT and Hospitality as a model	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
14)Pension Fund	Inspiring <i>investment enhancement towards Local Market Stability</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
15)Water Services	Minimising water loss by <i>inspiring the ability to discover the early leakages by the process of observation</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Systematic Exploration</li> <li>• Combination of Solutions</li> <li>• Integration of Opportunities</li> </ul>

Type of Business	Summary of Type of Inspiring Projects / Models	Type of Problem Statement
16) Primary Care	<p>1-Early detection of Non Communicable Diseases (NCD's) (Diabetes, Blood Pressure, Cholesterol and Obesity) by inspiring</p> <p>2-Enhancement of Quality through <i>Inspiring Families</i> Physicians</p> <p>3-Practicing <i>Triage to inspire priority system in Healthcentres</i></p> <p>4-Early detection of <i>Psychosomatic in relevance to Anxiety</i> in Health Centre.</p>	<p><u>Main Technique:</u></p> <ul style="list-style-type: none"> <li>• Systematic Exploration</li> <li>• Combination of Solutions</li> <li>• Integration of Opportunities</li> </ul>
17) Secondary Care (Hospitals)	<p>Inspiring the <i>total throughput in Accident &amp; Emergency and admissions</i> in Hospitals based on Urgency of the cases</p>	<p><u>Main Technique:</u></p> <ul style="list-style-type: none"> <li>• Systematic Exploration</li> <li>• Combination of Solutions</li> <li>• Integration of Opportunities</li> </ul>
18) Secondary Care (Hospitals)	<p>Enhancing the <i>availability of the Capacity of Beds Utilisation</i> by inspiring towards higher <i>discharges on time</i> and based on defined protocols &amp; followup services</p>	<p><u>Main Technique:</u></p> <ul style="list-style-type: none"> <li>• Systematic Exploration</li> <li>• Combination of Solutions</li> <li>• Integration of Opportunities</li> </ul>

Type of Business	Summary of Type of Inspiring Projects / Models	Type of Problem Statement
19)Public Health	Inspiration in establishing <i>'Intelligent Inspection'</i> that minimize the rate of poisonous food calls or low hygiene fines by 90% with less manpower resources & trust worthiness enhancement. Thus enhancement of reputation of fast food services that supports local tourism.	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• New Concept Area</li> <li>• Reflect on Process of Learning</li> <li>• Innovate &amp; Incubate</li> </ul>
20)Health Enrichment	Enhancement of <i>'Quality of Life' practices</i> & style in coordination with Health Centres	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
21) Psychiatric Services	Inspiration to <i>Manage the anxiety</i> to avoid reaching the level of chronic anxiety where the individual would a patient treated with medicines and reduce suicide.	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• New Concept Area</li> <li>• Reflect on Process of Learning</li> <li>• Innovate &amp; Incubate</li> </ul>
22)Quality Assurance in Education	Ensuring that level of student <i>in under-performing school</i> meets the minimal standard.	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>

Type of Business	Summary of Type of Inspiring Projects / Models	Type of Problem Statement
23) Labor Fund	<i>Ensuring that all funded projects had made a success story through the domino's effect of Labor Funds.</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
24) Municipality Services	Building a comprehensive model for local people about the <i>effect of recycling</i> in their 'Lifelong learning' abilities and 'Qualities of Life' through inspiring (Schools, Families, Local Super Markets, NGO's) to take more proactive practices toward Social Responsibility.	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
25) Research & Development	1-Establishment of <i>Knowledge Asset register</i> in organization 2- Enhancement of University or the R&D centre to <i>deliver multi-disciplined projects</i> 3- Enhancement of <i>Project Closure to ensure the learning &amp; enhancement of projects</i> delivery stays within the organization 4-Study <i>the integration between the contracted projects and published papers.</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Systematic Exploration</li> <li>• Combination of Solutions</li> <li>• Integration of Opportunities</li> <li>• Start to reflect on the process of learning</li> </ul>

Type of Business	Summary of Type of Inspiring Projects / Models	Type of Problem Statement
26)University	Ensuring <i>Lifelong Learners Students</i> through inspiring way of flipped class teaching and ensuring suitable preparedness for coming life challenges.	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Pull Thinking Stratification</li> <li>• Internal Codification</li> <li>• External Classification</li> </ul>
27)Labor Market	<i>Shifting Unemployment</i> through inspiring the <i>stratification of Human Capital data and building models in specific industries</i> as per countries sustainable socio-economy needs	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Pull Thinking Stratification</li> <li>• Internal Codification</li> <li>• External Classification</li> </ul>
28) Minimising Traffic Accidents	<i>Inspiring traffic accidents</i> reduction efforts through: a) Enhancing the <i>road are designed towards worst cases</i> not best cases b) High <i>availability of road maintenance</i> and active learning on the black spots.	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>
29)Sanitary System	Enhancing drainage system design during <i>minimisation of repeated blockages in the sanitary system</i>	<u>Main Technique:</u> <ul style="list-style-type: none"> <li>• Basic Problem Statement</li> <li>• Observe, Clarify and Absorb</li> <li>• Reflect on the critical blind-spot</li> </ul>

*Despite the complexity of the type of the problems tackled, the restatement of the problem itself can help us tackle lots of the world problems. I.e. we can solve lots of socio-economic healthcare, poverty, educational; unemployment, safety, environmental problems through utilization of cognitive focus that problem-solving labs use and brings in. To practice this possibility exercise (4) in Appendix (3) would be suitable for now. Besides, it is good to emphasise that there are still many unique ways and high possibility of variety of solutions that can be generated from problem-solving labs that were carried out by the researcher in different settings and different cultures.*

Problem-solving labs carries uniqueness of problem statement that lead to creation of field driven ideation. This process of ideation through problem-solving enhanced the level of results and even the level of organisation contribution to the socio-economy. The results of more than 190 projects, similar in complexity of those presented in Table (7-1) or in Appendix (2) shows *the importance of problem-solving labs in raising the capacity of communities' problem-solving and in enhancing the level of knowledge integration.*

*Part of the application that will help to enhance our ability to discover the hidden spots inside any problem is our ability to absorb the essence of the problem and what messages it does send.*

The learning created by the problem-solving labs problem statement has both a direct and indirect influence in creating the cycle of inspiration. Inspiration spirit simply can be created from facing a problem, or a challenge, or an opportunity that is built during the search for solutions. Failing to equip our mindsets with different waves of any of the problem statements as in Table (7-1) means we lose our focused thinking and curiosity, which creates one of the main blockages of inspiration and problem solving journey. This is why Inspiration Economy Problem-solving labs depends on re-statement, as without it we can't maintain the minimal level of curiosity.

## ***Problem-solving Lab- Case SEVEN*** ***Mauritania Carpet Industry***

### **A) Summary of the Socio-economic Problem Story**

Mauritania is one of the north-eastern African countries that are on the Atlantic Ocean. Mauritania is largely a desert country presents a cultural contrast, with an Arab-Berber population to the north and black Africans to the south. Many of its people are nomads or spread through small villages with Camel and Sheep heard bringing in many products as milk and meat, besides the thick long wool that is ideal for the tough thread carpets.

In the capital city of Nouakchott in Mauritania there is a Handcrafted carpet factory that specialises in doing large carpets from the Camel Wool. The carpets are handcrafted by Mauritanian women who come to the capital from different areas of the country. Some of these women are experts in carpets handcrafting, others have learned this skill in the factory These women would sit before the looms and weave the rugs, in a process that might take them as long as a year for each large carpet.

Aneesa and her daughter Fatiha, daughters of a nomad family, are just two of more than 50 women working in the carpet factory. Most of these women come from rural or nomad families who live more than 50 Kilometres away from the capital. They usually come and stay for few months to work and then go back home.

The factory used to be owned by the government, but was privatised and owned later by Mauritanian Business Women whom restructured the factory and tried to enhance the product quality that leads to a better sale.

Even though this natural carpet factory had more than 100 manual vintage wooden loom carpet apparatus where each of these apparatus could have two to four women working on it, per shift. Counting the productivity of the factory compared to simply the current capacity of man-machine, it is easy to conclude that the factory had in reality only 8% of production capacity. The factory didn't have a proper marketing plan for its high-end products, i.e. organic handmade Camel Wool carpets of large sizes which could be sold in Europe with high-profit margins.

A social influence, the factory, in reality, had little influence in the community socio-economy and suffered from its competitiveness in creating a high return on investment. The slow productivity and the inability to sustain the handcrafters, due to low pay compared and expenses in living in the capital, besides the centralised location in the capital. In 2016 the factory was offered a donation from one of the main regional development banks to automate the whole factory in order to enhance both its product quality and quantity, while also reducing its dependence on the manual labour.

### **B) The Classical Solution to such Problem**

For an organisation that looks for quick wins, this story would look like a progressive successive story. The classical solution for this case study is to accept the donation offered and thus go ahead with producing 'auto manufactured' well designed, high-quality Camel Wool Rugs and Carpets with less labour intensive production. This should reduce the labour issues while enhancing the return on investment and higher material turnover ratio. This would help the marketing team to define focused sales plans for different markets demand.



### C) The Inspiring Socio-Economic Solution

#### 1- Understanding the Problem Vectors

The problem vectors in this problem might be not clear for those problem solvers who are not used to seeing the potential of socio-economic opportunities in any type of problem. However, for an expert in socio-economic change, this is a great problem where we can use the need to re-invent the factory approach to production to the benefit of the community.

Three vectors can be defined clearly: the need for having supply of Camel Wools Carpets coming from all over Mauritania and African Sahara Desert, the need for a strategic marketing that would use the Story of the carpet weavers and weaving pattern along with specific style of packaging to sell the carpets and where each carpet would be sold as high-profit margin that central factory carpets since it has its own story coming from different homes, with different conditions and would be like pieces of collection. The other third vector is the manufacturing process is completely an environmentally friendly Eco System process with support for the women and the disabled. This pull thinking help to create micro start entrepreneurs and a family business that supports the rural communities where poverty is very high. These three vectors are represented in Figure (7-5).

Figure (7-5) Problem Vectors of Mauritania Wool Production from Rural Villages- Case Study



## *2- The solution Proposed*

The first proposed socio-economic change was to distribute the vintage wooden loom carpet apparatus in different areas of the Mauritanian rural villages. There would be four women working on each apparatus. Thus we would have more than 200 women from different families working on fifty apparatus spread throughout the country. If the apparatus operated in two shifts this would increase the possibilities of more production and also a number of people working on it, hence would increase the income of the labour families.

In order to increase the labour productivity and independence, each group would be given an amount of camel wool enough to do two carpets of 3x5 meters, as a start-up loan. The factory would own the loan of the wool and also the apparatus.

The third part of the socio-economic solution is to have the carpets/rugs graded for quality when bought by the factory. The factory would ensure that the workers would have peer to peer development, besides the mentorship program that would be developed by the factory training centre.

The marketing team would work on packaging the carpets and define European outlets that would be interested in buying this eco-friendly product. The marketing team would ensure that each carpet would have a story about: the life of the women who made the carpet, the heritage of Camel wool handcrafting in Mauritania and its differentiation, besides the guarantee from third parties.

### 3- *Outcome of Problem Solution*

More quality of Life for the handcraft Women and their families, where more income can be generated while maintaining, working within family and village setup. Besides this important outcome more return on investment for the factory whom would improve the product delivery, quality of products bought based on grading. Much fewer rejections of carpet wool and most of all improvement of sales team competitiveness.

The proposed outcome solution would improve also the eco-tourism in Mauritania and spread the unique brand of Mauritanian wool industry. The outcome of this problem solution is the sustainability of the uniqueness of high-quality production of hand-woven carpets industry in North Eastern Africa. Many rural and necessity entrepreneurs can from sustaining such eco-friendly industry where wool cleaning, threading and weaving kits could be supplied, besides sales in tourist outlets.

# CH 8 – INNOVATE

## *Breakthrough in Socioeconomic Solutions*

authorHOUSE

## Breakthrough Thinking Role in Re-Inventing Our Lives

Life doesn't have a meaning and differentiation for humanity without a breakthrough. Without being stretched to their limits; many scholars, scientists, researchers, entrepreneurs, gurus would've not managed to create sensational progress for humanity. Hence, our lives and specially today and in the future would be evaluated by the breakthroughs we make on our journey. With the advent of many of the world facilities and knowledge access; breakthroughs aren't expected only from the 'effective few of us', but from the 'majority' too.

*Breakthroughs can be found only when we get involved in the next stage of our consciousness. It is the stage when we get involved with the community issues, or in other words when we free ourselves from the constraints within.* The advantage of this targeted breakthrough is that it is free of politics, bureaucracy, and ego. These breakthroughs are only dependents on our explorations and intentions, not our burnout. Therefore, we see that most breakthroughs are more soulful, more meaningful and very synergetic. i.e. most of socio-economy related breakthroughs you'll see and experience here in this handbook are less resource dependent and more towards unique utilisation of the problem intrinsic power represented by the opportunities it carries within.

Therefore, we define in this handbook 'breakthrough-thinking' as the *type of thinking that enhances our lives through the different problem-solving approaches which optimise our 'creative capacities'*. With breakthrough thinking, we can *bring original solutions to all the types of the socio-economic problems rather than copying solutions* from other similar experiences or leading communities. It is a type of thinking that is highly needed for effectively exploring and

expanding the purposefulness of our lives and thus in selecting the right problems to work on during the rest of our life.

*The breakthrough thinking promotes the holistic framework of the socio-economic issue and makes the problem solver go into selective details while avoiding to collect unnecessary data.*

*The breakthrough thinking promotes the holistic framework of the socio-economic issue and makes the problem solver go into selective details while avoiding to collect unnecessary data. It is a type of thinking that makes the problem investigator see the solutions rather than being only busy with the problem.*

In order to establish capacity for this creative thinking in organisations or communities, we need to believe that each socio-economic problem or situation is different. *This means we need to see first what is unique about this socio-economic problem and differentiate it amongst other similar socio-economic issues.* Then explore and/or expand the humble curiosity of knowing where to work on the right problem, i.e. Avoiding mind fixation.

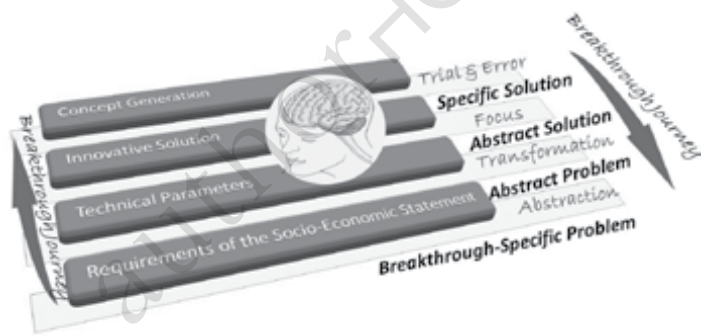
*With breakthrough thinking, we set our mind to work on exploring the problem of today based on what might be the solution of the future. Thus, each problem would have its own holistic framework details.* This thinking should help us to focus on collecting data about the possible solution(s) rather than the problem. *These features are the foundations for organizing projects to advance performance beyond what can be reasonably expected.* The systems feature is of special importance, as it operationalizes what has been espoused by many critics of both conventional and systems thinking.

*The biased conscious and unconscious observations build a psychology that help the problem solver to calibrate the dynamics of the problem and thus can lead to new discoveries.*

Breakthrough Thinking simply involves thinking of alternative ways to achieve specified desired ends in our life and choosing the one that eliminates the problem definitely. This type of thinking brings “Breakthroughs” that help us first to abstract our possible opportunities that lead to a unique innovative outcome, as shown in Figure (8-1). In order to reach the abstraction of such outcomes, we need to integrate the socio-economic problems and meet its technical parameters with our life purposes again. This starts when we specify the problem-statement.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

Figure (8-1) Breakthrough Journey of Problem-solving



## Creativity Role in Breakthroughs of Problem-solving

The goal of any creative production in problem-solving is to create a type of breakthrough to a complex problem. Therefore, creativity is very important for problem-solving as it raises our

ability to find appropriate problems and then *raises our capacity in creating a deferred judgement. Through creative thinking, we can raise our persistence for gaining originality in our socio-economic solution without fear of failure or fear of non-conforming to social pressure.*

Guilford (1967) claims that problem-solving and creative production is basically the same phenomena. He states that to have an original solution to a problem, there has to be some creativity, alternatively, *the goal of creative production at the end is to solve some kind of a problem.* When we try to be creative in our approach, we enhance our deep commitment to acquiring sufficient and specific knowledge. *Through creativity we develop practical interpersonal and communication as part of the problem-solving journey, thus we improve the intellectual challenge and its possible growth.*

*Through creative thinking, we can raise our persistence for gaining originality in our socio-economic solution 'without fear of failure' or 'fear of non-conforming' to social pressure.*

During the exploration of the problem opportunities, many ideas are generated which keeps the mind focused on solutions-finding. Choosing the most appropriate solution, requires setting specific criteria for the problem that would help to evaluate the alternative solutions and then have an action plan to execute it. Therefore, for creative problem-solving we need to improve first the situation, or the background with all the facts, questions, data, feelings which are related to the problem under study. This exercise would help us to define what is the socio-economic problem that we really need to focus on. For example, when we try to tackle the shortage of the health facilities to meet the demand of the increasing patient populations, as relevant to listed *Cases (6) and (7)* in Appendix (2), we need to see first is the problem in the management of



the health facilities, or is it about understanding the healthcare concept of prevention. The logical causality for such problems would relate it to the increase demands on the hospital facilities, or in the failure of setting effective quality of life practices that would make most population be free from depending on the health facilities; or is it really an issue of shortage of resources?

Therefore, the exercise of improving first the problem background helps in understanding and absorbing the needs to be addressed. This level of understanding helps us to realise that there are many possible solutions for how to solve the problem. Actually, going back to setting up the real background of the problem helps to strengthen the solution, as it would make us more confident about the problem. This confidence helps us select the best solutions that would most probably create a sustainable effective outcome. This confidence would extend to the stage when action steps are taken towards the total solution realisation.

*Creativity in dealing with complex problems needs gutty leadership or the will to try and explore. With this gutty attempt, we need to use some competence that brings the acceptance of humility along with the experiences that both knowledge and skills provide. The gutty leadership would extend to increase our curiosity about the frequency of attempts.*

*Our biases toward wrong solutions increase if our ability to learn from previous errors became blocked due to “knew all” syndrome.*

The spirit of targeting creativity helps us to think in new ways thus raise the capacity to push through uncreative dry spells. This means we need to have at the start of such journey an incubation period, which is a time we would be having mature ideas after they are being cultivated. Through classifying these ideas, we

would combine existing ideas in different ways for new purposes by seeing the same thing but thinking of something different.

*Such creative problem-solving journey is what enhances the outcome of what is known to be as “reverse problem-solving”, or “differential diagnosis”, or “experiential learning problem-solving”.* Such a journey is very important for the development of our socio-economies, as it enhances the practices of curiosity that are led by both spirits of exploration and discovery.

## **Complex Problems Solving for Re-Inventing Our Lives**

Immersing the problem solver with the life and style of the community is very important to its total solution. Communities problems are usually complex and thus one need to live it in order to understand it. This means we need to observe closely not what is available, but not available, in the leads of the problem. Also, we need to observe how decisions are made in relevance to the problem. Once the complex problem characteristics are identified they need to be explored through peers-review. This would help to create insight statements that stratify the problem complexity.

In order to enhance our involvement with a socio-economic problem, one needs to identify first the problem natural and artificial leads. *The natural socio-economic problem leads come from experiences or results.* While the artificial problem leads would come from a formal set of experiences. The more we are involved with the solution strategy the more we can identify and allocate the most suitable resources and obtain proper feedback.

This needs more dedicated advocates and well-prepared community of complex issues problem solvers that have both the spirit and

energy to deal with the more turbulent life changes and challenges. This means *we need to enhance solutions around life issues and overcome the different seen and hidden challenges beforehand in order to enhance the meaning of life all that long living time.*

Back in the early of the 21<sup>st</sup> century, we had many people in the world frustrated about their lives in a very segregated way. Today with the age of information and knowledge economy that brought many accumulated big source data we can't claim this anymore. This means we need to tackle socio-economic problems and challenges in much more advanced way.

Today, we need to see the many lost-opportunities that either missed to capture, or lost from being identified, as more expectations for high-quality of life are coming from the world population. You can see in the exhaustive lists in Appendix (2) many similar cases we gone through in our life journey, but with limited innovative interventions. Throughout this Handbook we keep asking why we don't think this way? so that we can re-invent our lives.

Transforming the responsibility of dealing with the demands of the socio-economic issues from mainly the government to those society stakeholders isn't easy, it needs an exploration of the many keywords that can help reinvent life.

*Reinventing our lives means we need now to push harder and know when to persist while solving a complete problem even when we feel we want to quit. This means as we go through solving complex issues and problems we need to also work on modifying attitudes as we go through solutions.* To re-invent one's life we need to establish for him/her long-term goals, and this can happen by discovering the self when encountering socio-economic and general community's issues. This builds the life purposefulness that comes from being fulfilled and engaged with a problem that makes meaning for

living every day. This builds what we call the big picture of things that give life meaning.

*Once the organisations or the community start to build its learning on the aligned and concentrated energy, i.e. without bias, we would have significant (large) improvements towards a generalised problem outcome.*

Re-inventing our lives means a journey that would start with knowing what we should be striving for? It is a project for really deeply immersing ourselves in the future without looking backwards or regretting the past events of our life.

Before we can reinvent our life we need to know our capacity and understand what opportunities in front of us when we get engaged with communities' issues. This involvement and engagement would help to identify the humility that makes us appreciate our strengths, weaknesses, passions and the story we want to leave in this world.

*Setting the intention to deal with or solve a socio-economic problem give us a sense of what to achieve in this life journey. The complexity of the problems in the community would help us to avoid the tendency towards illusory superiority and would make us be more honest in assessing ourselves. This persistence would ultimately make us achieve the reinvention we seek.*

If we have people understand the importance of re-inventing their lives through the angle of handling complex communities' issues; the quality of life of many developed, semi-development and developing and the under-developed countries would be different and most probably better.

Caring for others while seeing the benefits on our future selves makes us discover our intrinsic powers and be inspired, i.e.

without the need for extrinsic motivation, and visualise the long-term payoffs. For example, picturing a housewife who travel the world to help solve the chronic issue, or a youth dedicated to giving new solutions to their communities, or a retiree who opt-in for volunteering activities, or expertise transformation would make much more meaning of that particular period of our life.

Solving complex problem thus help to us create new positive and constructive habits that would take us out of the routines we've been following for years. The creation of the new habits helps us to establish a gradual reinvention plan that integrates long-term goals into the present.

### **Innovativeness of Problem-solving Process**

Problem-solving process needs different innovation attempts that: (1) Establish the problem base, (2) Analyse the problem, (3) Synthesize the findings, and (4) Communicate the results. As we start analysis and breaking-down the problem into understandable components we can synthesise the parts in a way that helps us better understand the whole problem. Then, the communication of the results is translated into a form that is relevant to stakeholders and peer community needs.

Part of problem-solving process is establishing 'transformative learning' that occurs to help us transform from 'learning to understand' to 'learning to perform'. Learning to perform, help us to visualise what the outcome should be, i.e. to start the process of searching for defined specific meanings. These meanings help us to build specific awareness that direct the journey for a specific type of problem opportunities knowledge collection. This directed knowledge collection helps to direct the waves of empathetic thinking about the problem and its potential solutions.

Innovativeness in problem-solving originates through building meanings and different perspectives on the problem. With visualisation of the problem, the brain creates storage of bins in the memory. This innovativeness can be seen clearly in how the chess players deal with a thoughtful action, i.e. visualising the outcome of the move towards a challenge before actually being actively engaged.

*To ensure effective exploration of the problem we need to challenge the assumptions around it, where most of these assumptions create chains in our mindset that this problem can't be solved without being external resources dependent.*

More problem-focused innovation cycles can start with reflections, followed by the eager to do more experimentations. This would lead to the practice of reflections that usually help us to overcome any distortions to the problem.

Problem innovativeness depends on the validity of what is being communicated along with the comprehensibility, appropriateness or authenticity of the observations collected. Taking a pause after visualising the problem outcome helps to optimise the decision-making process thus building the innovation elements needed. For example, observing the distribution of behaviour of the population towards a socio-economic problem found to help specify the type of innovative composition needed. This innovativeness can be seen in describing the way to deal with the problem, or specifying what does the problem mean, or confronting how the problem became like this, and reconstructing the problem to classify, or stratify its complexity.

Innovativeness of the problem helps to judge the social conditions as a prerequisite and reflective discourse that would help its final interpretation. Figure (8-2) shows how innovativeness of the problem-solving process usually starts with critical thinking that

uses both (logical vs. analogical approach), followed by disruptive thinking (reverse thinking) and finally followed by an integrative approach that leads to (system design thinking).

Figure (8-2) Process of Problem Innovativeness



## Disruptive Problem-solving and Resilience

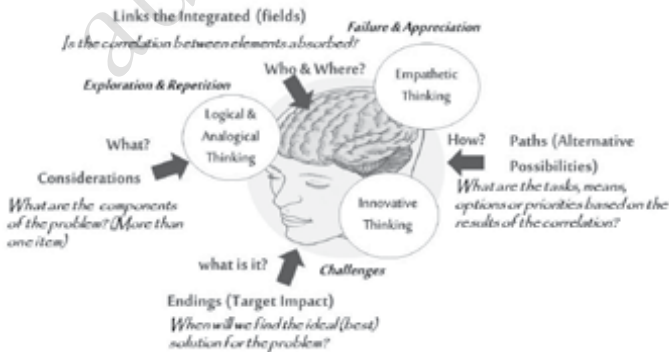
More than ever today using disruptive problem-solving approaches found to help building considerations about the problem components using logical and analogical thinking, as shown in Figure (5-4). With the curiosity and repeated exploration, the problem solvers could link and integrate alternative possibilities and setup stories for ways in managing challenges of the problem until it is solved. Therefore, part of the transformation plans towards resilient economy societies is to build up a mindset that appreciates and realise the importance of understanding the content of any problem, then its learning objectives and its available resources.

During the disruption, the problem solver should be trained to look for the story to find out the essence of a chronic problem, besides diagnosing the disrupted problem. The problem can also be created from a series of stories. The more the society develop and give reason to go through backwards thinking, the more it could be ready for solving complex problems.

*The complexity of the problems in the community would help us to avoid the tendency towards illusory superiority and would make us be more honest as assess ourselves which ultimately would make us achieve the reinvention we seek.*

It is expected to synthesise the problems and make analogies with the different things we do. Synthetic thought helps to see opportunities, even in the way they live their life every day. This type of thinking generates a variety of possible opportunity options, thus helping the problem solver to develop or see possible solutions in each problem. Figure (8-3) shows the role of disruptive thinking in problem-solving.

Figure (8-3) Represents the Disruptive Thinking in the Mind During a Challenge or a Problem





*Part of the transformation plans when we are solving a socio-economic problem is to build up the mindset that appreciates and realise the importance of understanding the content of any problem, then its learning objectives and its available resources.*

## **Socio-Economic Issues Convergent Tools**

Every socio-economic problem has in it the seeds its own solution. These solutions come from the ‘dynamic balance’, between divergent and convergent thinking, which generate options that narrow down the ideas that were generated in each stage. For example, as in *Case (7)* sub-case (1), which focused on creating more availability for emergency cases without stretching more public resources; the convergence made the focus on the way the bed is managed, which led to the way the discharge is managed, which led to the development of a communication model between the medical consultants and healthcare team.

Using the psychology of convergent tools help to identify promising ideas so that the problem investigator won’t be wondering “what is next?”. At this stage, the problem solver would have the authority over the ideas and can push it into becoming actions. Through using affirmative judgments, the problem solver would work to improve options that lead to better novelty solutions.

In the past few decades, psychologists and business people alike have discovered that successful problem solvers tend to use the same type of process to identify and implement the solutions to their problems. This process works for any kind of problem, large or small. The complex problem convergent tools start with identifying facts and information. This help to move the feelings

and emotions to stages of empathy where we understand the new possibilities and the implications of the problem opportunities.

## **'Blink' as a Breakthrough Solution Methodology**

In his best seller book *Blink: The Power of Thinking Without Thinking*, Malcolm Gladwell proposed that in the age of information overload, and in order to bring together selective diverse elements when *creating a decision regarding a specific problem, we need to limit these decisions to be based on limited information*. Research shows that what Gladwell concluded is often, as good as, or better than decisions made with deep critical thinking and accumulated information. This practice of blinking while attempting to manage or handle problems is considered one of the most advanced techniques in complex problem-solving and one of the new creativity paths in the age of huge information.

*Without blinking we would be controlled more by the adaptive unconscious power that makes effective decisions based on personal likes and dislikes of stereotypes*. Especially in socio-economic problems, such intuitive judgments can have disastrous consequences. The dilemma in problem-solving would be to decide between when to tap into our unconscious, and when to use a more critical approach as straightforward choices that are based on a deliberate analysis.

*Similar to blink there are many advanced contemporary creative problem-solving tools that enhance our capacity to deal with complex issues*. For example, there are many similarities between blink and our attempts to explore a problem.

## Youth Innovation in Dealing with Socio-Economic Problems

In 2016, an 'Inspiration Economy' project started in Bosnia and Herzegovina with a focused program on specific selected socio-economic problems. A collection of twenty-five youth students of ages between 15 till 22 years were distributed equally on five teams to deal with identified socio-economic challenges. Each of the five teams had a university professor as a mentor. All the teams were trained in socio-economic problem-solving with the *intention to bring the early stages of outcome through the creation of socio-economic solution models purely by the power of youth*. The intention of the model is to show the influence of youth innovativeness in tackling five different socio-economic issues: the rise of poverty, low youth quality of life, the spread of gambling (betting), low volunteering and entrepreneurial spirit; besides the high percentage of youth migration. These are the sub-cases listed as part of *Case (45)* in Appendix (2).

*In order to position our perspective towards arriving to desirable, feasible, and viable solutions, we need to avoid having only one lens through which we will look through to find the opportunities in the problem.*

Defining a socio-economic problem as the issue of high migration of youth, as mentioned in sub-case (1) of *Case (45)* helped to create a new breakthrough in dealing with this issue through identifying the type of focus in two stages: *visualising the influence of the project on the socio-economy and then seeing the type of opportunities that can be 'milked' or 'extracted' from the problem*. The migration of youth found to be delicate as it has many socio-political links, besides its influence on the economy. Therefore, careful dissection of the problem, using problem anatomy was performed. In summary, this project managed to 'mitigate the risks of youth migration' through setting 'mitigation' as the

main problem vector that the solution model would bring as an outcome. The mitigation project managed to bring models that reduced the length of migration, or reduced the types of migration, or reduced the migrating professions and genders and emphasise the idea of temporary migration. Figure (8-4) give an idea of the basis for the breakthrough of the 'youth migration mitigation model solution'.

Figure (8-4) Youth Migration Mitigation Model Solution



All of the socio-economic youth projects, similar to the 'mitigation of youth migration' were planned to be delivered in two stages. In stage one guidance for youth, projects were given on how to establish visualisations and reflections before exploring the socio-economic problem opportunities. This stage targeted to clarify how youth can put resilient, yet, ambitious problem solution outcome within each project. This stage also helps to clarify the implementation story that would turn the problem into a success story and a model of reference.

Based on the selection of the socio-economic project that addresses the community, the youth were *trained on how to expose the different attempts that would raise their capacity to deal with the different socio-economic problems.*

*The second stage focused on mentoring youth on setting priorities of importance to youth socio-economic problems to discover the “intrinsic powers” and the opportunities within the tackled socio-economic issue. All the teams were challenged to bring breakthrough solutions with “minimal resources” and while utilizing partnership and “people involvement”.*

The scores for main projects stakeholders: teams peer-to-peer evaluation, the team mentors, the visiting forum experts, the forum participants and the beneficiaries have been collectively calculated to show how far each team managed to use the visualisation and critical reflection in tackling the socio-economic problem and in exploring most suitable resilient outcome or solution.

*The youth teams were given three workshops; the first one was to understand their roles and build team spirit and cohesion, besides defining clearly the scope of the problem tackled. The second workshop targeted to incorporate visualisation of the socio-economic outcome which each team could target. The third workshop was to ensure the sustenance of the model created and dealing with socio-economic problems in their communities. The purpose was to raise the capacity of these young participants to deal with problems, without resources or authority.*

Each team was given months of June till early September to frequently meet, collect data on the problem through both qualitative and quantitative observations. *The youth participants were trained on how to deal with early problem reflections on the*

*socio-economic model targeted and the outcome visualised.* Each team was asked to follow template slides to get a focused reflection on the problem from all its stakeholders, including the team members, the beneficiaries, the mentors, the invited evaluating experts.

*Through the gamification mindset, the problem solver would start with more pre-defined boundary for the socio-economic issue.*

A criterion of 10 points was set to help the different youth teams visualise and reflect on the problem, these points focused on:

- 1. The team commitment and their efforts in exploring the visualised socio-economic problem and its targeted outcome.*
- 2. The problem solution story visualised in a way that would turn the problem into a success story and a model of reference.*
- 3. Challenges which overcome the problem with time.*
- 4. How the problem would help in inspiring the community once its outcome is clear?*
- 5. How the problem is visualised to help trigger inspiration in youth and their empowerment?*
- 6. What are the different attempts that send a message about the capacity of youth in creating a difference towards solving their socio-economic problems?*
- 7. How the problem focuses on the socio-economic priorities?*
- 8. How the problem is driven by evidence-based measurements?*
- 9. How the problem helps to discover the “intrinsic powers” of each youth?*
- 10. How the problem was done based on “minimal resources” while utilizing partnership and “people involvement”?*

*In order to their integration with socio-economic problem-solving, youth are asked to observe, then discuss and identify, collectively*

*together, the issues observed and then propose the opportunities for the solutions.*

As early September approached, teams were asked to prepare a focused presentation about the results of the five problems tackled. The level of achievement of the visualised outcome of the problem was discussed in detail in the presence of the forum experts. Interviews with the socio-economic problems experts showed the status of achievement of each team, the role of visualisation of each solution proposed and how each team played a role in the development of socio-economy of the community, through tackling the problem in an innovative way.

This three-month problem-solving exercise helped youth to see the big picture in their role towards complex socio-economic problems, i.e. build more life purposefulness, besides feeling their empowerment. The main result of this case study was that youth are being able to make a more creative change in their socio-economy, without the dependency on major resources or authority. Besides, they developed maturity in proper judgements towards life and society problems based on facts.

Both 'early workshops', and 'post workshops' helped the youth teams' members to start to believe that they can make a differentiated innovative socio-economic models from their community issues. To evaluate the innovativeness of achieved socio-economic model proposed and implemented by each of the five teams, the main projects stakeholders: teams peer-to-peer, the team mentors, the visiting forum experts, the forum participants and the beneficiaries have all been asked to do a separate evaluation. Then the results of each team were tabulated after they have been summed. The tabulation in Table (8-1) meant to show how far each team managed to use

the visualisation and critical reflection in tackling the socio-economic problem and exploring the socio-economic problem. The different summary of the results of each team selected project in Table (8-1) show the specific innovativeness created through the problem-solving.

Table (8-1) Illustrates the Teams Performance Scores in relevance to Innovativeness in dealing with Youth Socio-Economic Problem.

**Table 8-1-a Team Project: Youth Quality of Life and Poverty**

Problem-solving Innovativeness:

- a) Measuring the type of Youth's Risks on Quality of Life
- b) Engagement of Youth with Humanitarian Agency to Improve 'Youth-under-poverty' Quality of Life

Youth Economy Projects Evaluation	Visualisation	Critical Reflection	Accuracy of Visualised Outcome	Importance of Model for Socio-Economic Problem
Peer-to-Peer Team Evaluation	5	4	3	5
Visiting Experts Evaluation	4	4	4	4
Team Mentors Evaluation	5	5	3	5
Youth Economy Forum Participants Evaluation	4	4	5	5



**Table 8-1-b Team Project: Youth Values and Gambling (Betting)**

Problem-solving Innovativeness:

- a) Focusing on Youth and Family Values by Two Women Driven NGO's
- b) Fostering a Program for Creating a Betting Free School

Youth Economy Projects Evaluation	Visualisation	Critical Reflection	Accuracy of Visualised Outcome	Importance of Model for Socio-Economic Problem
Peer-to-Peer Team Evaluation	3	4	3	4
Visiting Experts Evaluation	4	4	4	5
Team Mentors Evaluation	3	3	3	4
Youth Economy Forum Participants Evaluation	5	3	5	5

**Table 8-1-c Team Project: Youth Voluntary Contribution through Civic Organisations**

Problem-solving Innovativeness:

- a) Measuring the contribution of youth in youth-related NGO's and their influence on Youth Aspiration
- b) Engaging youth in Sports Club management, development and restructuring
- c) Measuring and Enhancing the effectiveness of extra-Curricular youth civic engagement programs

d) Studying Success Stories of Youth Voluntary Models and Successful Youth NGO's

Youth Economy Projects Stakeholders Evaluation	Visualisation	Critical Reflection	Accuracy of Visualised Outcome	Importance of Model for Socio-Economic Problem
Peer-to-Peer Team Evaluation	5	4	4	5
Visiting Experts Evaluation	5	4	4	3
Team Mentors Evaluation	5	3	4	4
Youth Economy Forum Participants Evaluation	5	4	4	5

**Table 8-1-d Team Project: Youth Entrepreneurship and Innovation**

Problem-solving Innovativeness:

- a) Measuring the contribution of youth in youth-related NGO's
- b) Measuring and Enhancing the effectiveness of extra-Curricular youth civic engagement programs
- c) Studying Success Stories of Youth Entrepreneurs in the Country
- d) Establishing youth peer to peer mentorship program
- e) Starting micro start projects for youth to live the experience and challenges of entrepreneurship and innovation.

- f) Establishing a Partnership Program with the Chamber of Commerce and Industry that is dedicated to the development of Youth Entrepreneurship and Innovation.

Youth Economy Projects Stakeholders Evaluation	Visualisation	Critical Reflection	Accuracy of Visualised Outcome	Importance of Model for Socio-Economic Problem
Peer-to-Peer Team Evaluation	3	3	4	4
Visiting Experts Evaluation	4	3	3	3
Team Mentors Evaluation	3	4	4	4
Youth Economy Forum Participants Evaluation	3	3	3	3

**Table 8-1-e Team Project: Migration Mitigation**

Problem-solving Innovativeness:

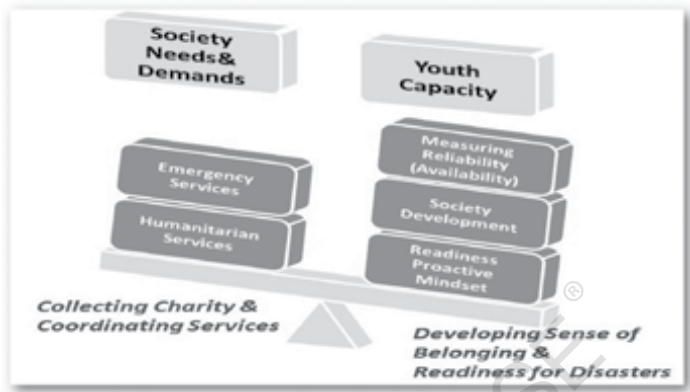
- a) Measuring the extent of the Youth Migration risks due to the approaches of current educational and government programs.
- b) Measuring and enhancing the effectiveness of extra-Curricular youth programs about the potentials and opportunities of the country.
- c) Studying success stories of Migrants who came back, or those youths chose to stay in the country.
- d) Establishing a partnership program to mitigate the risk of youth migration.

Youth Economy Projects Stakeholders Evaluation	Visualisation	Critical Reflection	Accuracy of Visualised Outcome	Importance of Model for Socio-Economic Problem
Peer-to-Peer Team Evaluation	3	3	2	5
Visiting Experts Evaluation	3	3	3	5
Team Mentors Evaluation	3	3	2	5
Youth Economy Forum Participants Evaluation	3	4	2	5

The selective data collections about the problem helped to manage the socio-economic observations and to visualise the outcome of the holistic thinking. Once the team started to visualise the influence of the data collected, an empathetic curious thinking would start deductive and inductive thinking.

Since the socio-economic problems address the United Nations Millennium Sustainable Development Goals (UN-SDGs) of 2015 – 2030, youth were very enthusiastic to show a clear outcome of their projects. *Issues of poverty, besides the promotion of volunteering, knowledge sharing and values development have triggered a holistic youth engagement with the socio-economic problems which helped to raise their self-confidence and critical thinking.* The youth projects evaluated help to develop youth spirit and social involvement. Table (8-5) represent the purpose of youth engagement with the society needs by increasing their capacity in solving the socio-economic problems.

Figure (8-5) Society Needs vs. Youth Capacity



## Innovativeness of Problem-solving Scientific Method

Problem-solving labs found to create an influence in solving complex problems in our societies. With influence, we mean that the results and the outcome of each lab would have more than one-time impact. *The labs work in influencing the society in a continuous way. With labs, we discover opportunities inside each social or economic problem that help to treat the root of the challenge or the problem tackled.*

Problem-solving should follow a scientific path if it is to be effective in leading to solid opportunities. First, we need to define and then state the problem, then we can conduct research that leads to formulating the visualised hypotheses. After this, we can test the hypotheses to confirm them or formulate new ones.

There are many psychological barriers and blocks hindering the creation of an inspirational, innovative and entrepreneurial

outcome. However, one of the main barriers that are against achieving an innovative solution is the inability to isolate problems, and/or to define a problem closely or from different angles. At certain problem stage, we might come at a saturation stage where we might fail to utilise all the available sensory inputs to discover opportunities. This barrier increases when we see problem-solving as a serious and not humorous business.

One of the problem interpretation insights come from the analysis of conflicts thinking towards an innovation. Here insights are discovered through characterisation of the socio-economic problems by first seeing the big picture of why they need to be solved in the first place. Once we start to apply the taxonomy to the problem and seek a particular example, we can start to see its solutions.

*Having a multidiscipline observation would help to build concentration and full attention to the phenomenon studied. Excluding all problems or subjects can attract some of the attention and focus.*

*Appreciating the noise towards socio-economic problems help us to contextualise and then formulate the nature of 'problems' and the 'opportunities inside' them. We call the management of 'noise' and its utilisation during troubleshooting attempts "Differential Diagnosis". Managing the noise and not avoiding it, help us strip- down the 'problem' and see that its components or constructs are full of alternative 'solutions', which we call 'opportunities'.*

Seeing the essence of things when formulating a solution to a problem help in building realisations that lead to generalising problem-solving approaches. This type of exercise increases our curiosity to search and strive to discover. This dual formula of curiosity and the challenge of associating possibilities raise our

ability to see things from different perspectives. This ability helps us to see the core of a problem as a hidden blind-spot.

## Setting the Frame for Problem-solving

The frame of any socio-economic problem-solving design is meant to challenge and create the project plan. Embracing socio-economic problem design requires us to interact with problems as poverty, social equality, etc. Designing to solve such complex socio-economic problems means we can attempt to deeply understand the culture we are planning to serve, to dream up ideas, and to create innovative new solutions rooted in people's actual needs.

*Similar to Gamification, socio-economic problems need social feedback, wherein the stakeholders are able to engage with each other, or through the facilitator of the socio-economic issue towards an agreed targeted solution.*

*When we target to solve a problem, we need to make first our ideas tangible, so that they can be tested and refined. Solving a problem requires empathy, optimism, creativity, confidence, management of ambiguity and continuous learning from failure.*

Ensuring that the mindsets are ready to see the problem from all its side would help us to better explore its opportunities. Observing communities lives, challenges, hopes and desires help to manage problems.

In order to appreciate and absorb the problem, we need to *make sense of everything that we've encountered, so that we can generate ideas and identify its opportunities. Therefore, we first need to tackle a problem to test its design and thus refine its solutions.* Socio-economic problems need more than just solving the problem

through, i.e. creating a successful model we need to spread the model idea to the market and maximize its impact in the world. Since socio-economic problems aren't a perfectly linear process, *the problem invariably needs to be studied in three phases: problem realisation (i.e. acceptance), problem inspiration (i.e. opportunity exploration), problem Ideation (i.e. opportunity exploitation).* Through these three phases of dealing with the problem, we can build deep empathy. The challenge is to turn the problem identified into a learned chance to design a new solution.

*Social enterprises, specifically, need to effectively communicate the way to observe socio-economic problems in order to bring out creative problem approaches.* For example, to build deep empathy with the people we are trying to serve, we need always to conduct interviews with them. To generate tangible sharp solutions, we need to bring more models that show best ways for solving the problems. This would help us to frame up the problem challenges and design how to get it to the market.

Finding the effective socio-economic path towards continuous innovation means we need to alternate between divergent and convergent thinking. Since socio-economic issue come only from learning directly from the dynamics of the fields, targeting the path to innovation requires us to open ourselves up to breadth of more possibilities. Then, the priority of problem handling means we take the most desirable, the most feasible, and the viable solutions. This would help us to frequently to shift gears through the process and swiftly move from concrete observations to highly abstracted thinking, and then right back again into learning by exploring.

During the exploration phase, we can dream up all kinds of possible solutions. However, *the more we can see or visualise the big impact in the world, the more we can identify what is the targeted*



*point.* Once we continue to diverge and converge, for a few times, towards finding the opportunities in the problem, then we'll find a new cycle that bring us closer and closer to the solution.

*Positioning our perspective to arrive at solutions that are desirable, feasible, and viable means that we need avoid having only one lens through which we look at the opportunities in the problem.* Once we've determined a range of solutions that could appeal to the community we're looking to serve, we can then start to specify what is technically feasible to be implemented and how to make the solution out of it sustainable.

*The psychology of problem-solving is about thinking that depends on the behaviour directed toward attaining the solutions which are usually not readily available.*

*Tackling a problem needs a balancing act, which is crucial to designing successful solutions.* To unlock the blocks to the balancing acts, the problem solver needs to have a 'creative confidence'.

*Targeting to enhance the capacity that would raise our intuition and figure out the opportunities in the socio-economic issue mean we need to keep on securing the most suitable knowledge that would help us to innovate.* As you start tackling a socio-economic challenge with small successes, then you'll build more 'creative confidence' and this would help you to challenge your mindset and perspectives again.

When the goal is to get impactful solutions out into the world, as you can't live in abstractions. You have to make these abstracted solutions real through testing their opportunities and the related ideas that reveals such opportunities, besides the ins and outs of such complexities. We need to focus on the feasibility of our socio-economic solutions designs in order to push our ideas forward.

In tackling a socio-economic problem, it doesn't matter what you make, the materials you use, or how beautiful the result is; the goal is always to explore the opportunities and convey its influence after it is exploited. Sometimes the goal is to make the maximum outcome out of it after it is being tested and then share. One of the best practices is to stop the prototype of the problem being solved at any stage in order to improve the mindsets.

## **Gamification as a Means of Problem-solving**

*Gamification is defined as the utilisation of game mechanics and game thinking, in a non-game setting or context.* Today, gamification is well applied in digital design, however, it is still weakly applied in the service industry, and specifically in dealing with socio-economic issues. Gamification has proven to be useful in the generation of ideas and tracking goals.

*Gamification in problem-solving is important as it helps to develop the necessary learning opportunities that maximise the engagement of the problem investigators with high Curiosity. Thus, using gamification in the problem solution-finding journey inspire the problem solvers and the problem stakeholders to continue exploring despite challenges with the same level of excitement.* This is especially important when investigating socio-economic issues, where changing community behaviour most probably would be part of the solution. Many socio-economic problems presented in this handbook were solved using the value-added mechanics of Gamification. For example, in Cases (6) and (7), the codification of the patients' emergency cases, by red, yellow and green, drastically improved the 'patients discharge' capacity of the hospital wards. Actually, put a score-board showing the achievement of each Medical Consultant and his team in managing effectively the 'patients discharge' improved their behaviour and enhanced the spirit of competition. the 'patients discharge'. Similar

type of gamification tools were applied in areas like education, energy generation, police services, municipalities, etc.

In any effective socio-economic situation, there would be many different opportunities to integrate a gamification mechanism in the solution; specifically, after the codification and classification are done during the diagnosis stage or towards attempting to do that. *One of the key elements of Gamification mechanisms that is very useful for a socio-economic problem-solving is story-building. The story sets the overall targeted problem outcome in dynamic motion thus the investigator would consider that reaching this outcome is like an adventure.* This feeling enhances the problem solvers involvement with their senses and would make them more capable to deeply-observe and interact more with the opportunities that are around the problem or inside it.

*Through the gamification mindset, the problem solver would start with more pre-defined boundary for the socio-economic issue.* Then a type of visualised reward or incentives or penalties would be put inside the problem solution. For example, ‘polluter pays’ is an example of one part of a solution journey to mitigate pollution in certain countries, as in *Case (57)* sub-case (1). Another example was carried out in reducing poisonous food incidences and identifying those food restaurants that are poisonous free for more than three years with a “Green-label”, as mentioned in *Case (8)* sub-case (1). Restaurants that need more time to get the green label were given focused training programs instead of more violation tickets, or closure penalties like used to be before.

*Similar to Gamification, socio-economic problems need social feedback, wherein the stakeholders are able to engage with each other, or through the facilitator of the socio-economic issue towards an agreed targeted solution.* Today, through gamification many people are able to participate in solving the paradox in dealing

with the proteins deficiency that leads to AIDS disease. Similar to this issue we have citizens prove their readiness for a change as accepting more improved recycling practices, as in *Case (18)* sub-case (1), where best blocks of the city are given a rating of five stars for their environmental friendly performance.

*Since gamification has different reasons for its basis of design, so does its utilisation in a socio-economic problem.*

*All focused problem solvers would measure the symptoms of the issue under investigation, or exploration first, in order to see the progress of the socio-economic problem and based on this measurement they would decide the next steps. This establishes a type of gamification cycle which can be established in various types of socio-economic issues as discussed in Table (8-2) which represent only selected cases from the many discussed in this Handbook.*

*Since gamification has different reasons for its basis of design, so does its utilisation in a socio-economic problem. Table (8-2) shows the different gamification types used for the different socio-economic issues. For example, we see that some issues would have a gamification design that would enhance the rewards-based and loyalty enhancement interaction, while others would help to develop the more effective Decision Making towards a realised outcome. Some gamification would also build Social Engagement, or better Achievement Recognition, or more effective Data Collection, or develop more focused Marketing. Other advanced gamification would help to develop the Core Strategy, or the Behavioural Management, or the System and Structure Development of the socio-economic issue. However, the most important parts of gamification are its strengths in creating effective Change Management, Model and Prototype Testing, while Building Multi-Disciplinary Approaches, or Studying Emotions and/or Establishing Deeper Synthesis and Analysis of the Socio-Economic Problem.*

Table (8-2) Represent Gamification Practices in Solving Selected Socio-Economic Problems

<b>Socio-Economic Issue</b>	<b>Type of Gamification Used</b>
1-Improving the 'Quality of Life' of the Elderly in 'Geriatric Care' Homes through re-exploiting their intrinsic powers ability	Study Emotions + Behaviour Management
2-Inspiring the capacity of the 'Productive Family Program' to be more self-independent and attractive for more family members to join as full-time employees/ owners till they reach a stable 'Family Business'.	Data Collection + Model and Prototype Testing
3-Building stronger family businesses that have higher Return on Capital Employed (ROCE).	Social Engagement + Core Strategy
4-Enhance the return from 'Elderly Homecare Production'	Rewards-based and Loyalty enhancement + Marketing
5-Enhance the quality of 'People with Disabilities' Production	Establish Deeper Synthesis and Analysis + Change Management
6-Early detection of Psycho-Somatic in relevance to Anxiety in Health Centre.	Study Emotions + Establish Deeper Synthesis and Analysis
7-Increase the Health centres readiness for Emergency Cases	System and Structure Development + Build Multi-Disciplinary Approaches

Socio-Economic Issue	Type of Gamification Used
8-Establishing 'Intelligent Inspection' that minimize the rate of poisonous calls or low hygiene fines by 90% with fewer manpower resources & trustworthiness enhancement.	Establish Deeper Synthesis and Analysis + Decision Making driven

In many of the problems and cases discussed in this Handbook, the socio-economic issue may utilise one or more of these gamification types. Through gamification, the status of the problem can be further explored and dissected. *The gamification mechanism helps to improve the design of problem solution and transform it to focus on effective sustainable outcomes through targeting the behaviour and specific desired actions.* This can be done by engaging the problem stakeholders in performing certain tasks the same as games designs.

*The spirit of reward that the gamification in socio-economic problem-solving brings help to establish incentives to concerned community members.* A Socio-economic issue rewards could include recognition, status, colour badges of progress and better access. *The spirit of gamification in any problem means we would have data tracking, such as the percentage of crime reduction, as per Cases (32), or in the enhancement of bed turnover ratio, as per Case (7) sub-case (1).* In conclusion, the gamification aids a better understanding of the socio-economic problem and the learning required from its opportunities.

*Gamification is used in problem-solving to correct the behaviour towards a social problem.* When we are curious, we can create a meaningful and more unique stimulation of best solutions through gamification techniques. *The repetition of curiosity through*

*the spirit of gamification helps to drive out, more fear, which helps to improve the problem solver insights.* With curiosity, we can improve the lateral thinking techniques and problem-solving skills. We can increase the curiosity economy through communication improvement. Gamification, in fact, brings a curiosity that enhances the understanding of socio-economic problem needs through completing the ideas and building synergy.

*Psychologically, gamification can play an important role in creating insights and waves in the brain and the heart that build life purposefulness while we are trying to solve a community problem. Gaming is the tool to inspire people towards being engaged in their socio-economic problem-solving with better curiosity.* This curiosity can be raised by coding or setting stars for the level of achievement which would lead to more interaction and desires for better discovery.

*Through gamification we can get more involved with the problem, i.e. our belief would increase to deliver what was visualised. Usually, here people would start to realise their ideation and finding a room for their unique solution.* Such type of imaginative yet practical socio-economic solutions proposed would surely build better persistence in the community and would establish the capacity to overcome other similar common socio-economic problems.

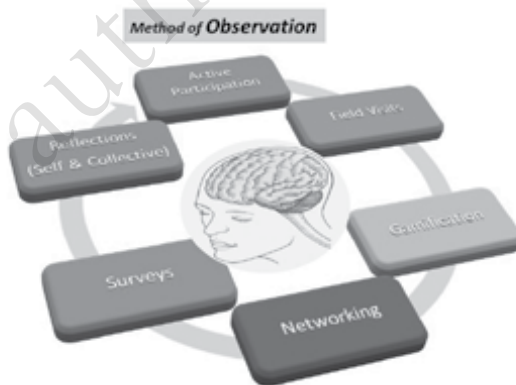
*We need behavioural modification when dealing with complex problems as through this modification we can create the suitable mindset that would be able to accept variety of alternative solutions and see the problems holistically, or the challenges from different perspectives.*

*Gamification help to establish more patience and perseverance that help to minimise problem cost and improve the total efforts towards the most effective outcome.* Over time the problem solver would

learn the most efficient way to deal with the problem, without failing to face it properly.

*Gamification spirit is used in many socio-economic solutions towards increasing the active engagement of the problem stakeholders in dealing with problem-solving which start with the field visits as shown in Figure (8-6). By interacting with problem opportunities during the field visits we can increase the practice of gamification and networking in the problem-solving journey. The gamification pushes the problem solver to be selective in investigating the opportunities by starting surveys. The feeling of gamification would help us to do reflections based on all the field visit and start comparing our collected observations, or our exploration attempts, in reference to earlier field visits of the same socio-economic issue or similar issues. For socio-economic problems, these constructs are very important to set the stage for breakthrough solutions.*

Figure (8-6) Role of Gamification in Problem-solving after Field Visits



*Designing gamification as part of problem-solving journey enhance our resilience motivator as an effective reflection learning mechanism*



*which creates meaning for the journey.* Thus gamification presents a unique psychologic and cognitive opportunity which links problems to life-purposefulness. The critical reflection that the gamification does *during the attempt of problem-solving creates 'dynamic interactions' which help to reassess the efficacy of the strategies and tactics used in dealing with the socio-economic issue.* For example, due to the increase of high talents leaving the police forces after they get their higher educations, a star program started to identify the experts in each field. Each type of expert is identified not only by his speciality, but also by stars where those of 3 to 5 stars would be given external and internal government projects and would ensure effective supervision of the government projects closure. The 'police experts star' helped to not only to maintain many police knowledge experts and reduce their turnover ratio, but also enhance their interaction with the public-community projects while also extract their security expertise before the government project closure.

*Gamification can be considered as kind of thinking that keeps us involved in solving problems, formulating inferences and calculating likelihoods.* Gamification creates critical thinking that carries high importance for specific issues as it focuses on a community desired outcome. If complex cases like poverty and obesity are tackled by the spirit of gamification it would be certainly the interest of many people that would be excited to be engaged with its solutions.

*Through gamification we can get more involved with the problem, i.e. our belief would increase to deliver what was visualised.*

As modern societies are becoming more complex with information becoming highly available and changing more rapidly, these all create demands on the problem solver to rethink, switch directions, and change problem-solving gamification strategies

constantly. *Gamification designs raise the capacity of the problem solver for accurate judgments while dealing with complex socio-economic problem-solving opportunities, as it raises the ability to step back and think about how real-life problems are solved.* This cognitive exercise builds psychological feelings, which enhances the curiosity for the problem solver. Gamification, in turn, raises the capacity of interpretation of the socio-economic issue through focused analysis and synthesis that lead to better deep discussions and final judgement. *If the readers review almost 70% of the cases in Appendix (2) they would find that these cases used gamification in different stages and specially at the beginning of observation and absorption or as a method for sustaining the outcome reached.*

The other value-added advantage of gamification is that it *helps the problem solver to closely observe the distribution of behaviour in a targets population*, such as the performance of the medical consultants in following up a special patient or clinical management protocols in *Case (6) and (7)* in Appendix (2) that would affect the bed turnover ratio and thus the availability of the bed for emergency patients.

*Thus through gamification design embedded in the problem-solution, we can transform the average group behaviour.* To uncover the forces that inhibit and constrain behaviour, the problem solver need to be engaged in four forms of *gamification actions*: (a) *describing (What needs to be done now?)*, (b) *informing (What does the problem carries of new meanings and values?)*, (c) *confronting (How can we overcome the current situation?)*, and (d) *reconstructing (How we might deal with this issue differently in the next attempt?)*.

*Through gamification design embedded in the problem-solution, we can transform the average group behaviour.*

Part of gamification comes from setting the criteria for judging prerequisites of social conditions, which *help in the final interpretation of the problem*. The measurement of the socio-economic challenges helps people to establish their learning process. When we use our capacity to reflect on action and to engage in continuous learning, we improve and differentiate our mindset and our capability in seeing solutions inside problems from different perspectives. This what gamification contribute to the problem-solving journey, which adds limitless boundaries to the final solution and outcome possibilities.

## Storyboard and Problem-solving

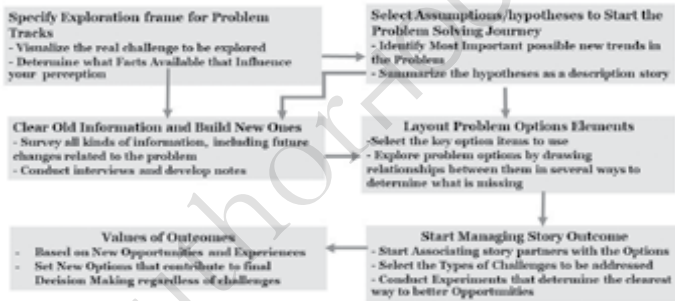
Storyboards can help you visualize your concept from the start to finish. *By plotting the elements of challenges, opportunities, failures and leads of the different issues of the socio-economic journey and solution attempts, we can start to build up a story that can be refined and would be respected as a model of reference due to its originality*. However, we don't have to storyboard the entire journey if it is too long. Even we may find it useful to test a component of our idea like an interaction by putting it on a story framework. The more we spend time reviewing the story that we are trying to build the more the purpose of we'll have insights into the concept of the problem outcome and its solutions.

The problem solver tries to create a common reference point for building a story from different angles. Long before starting an exploration for the final solution, the problem solver would try to create a storyboard for each opportunity scenario. *The storyboard helps the problem solver to be confident in the next sequence of explorations and how helshe would build more classification or stratification or synthesis of the available information*. Once the

opportunities are explored, the final storyboard would be tested or piloted.

In order to build an effective story, we need to specify first the exploration framework for the identified problem tracks as shown in Figure (8-7). Then we need to *establish the most suitable assumptions/hypotheses to start the problem-solving journey*. However, this is more achievable if we clear the old information and build new ones. Once the problem options elements are laid out, we can start managing the story outcome and extract its values.

Figure (8-7) Exploring Socio-Economic Problem Solutions Story



The problem solver sometimes would build his story around a 'character' that would be linked to an 'object' which both would lead to a clear 'outcome'. For example, in case of targeting to reduce the jewellery theft, in Case (32) sub-case (3), the problem solver might focus on the character of the 'community police' and their calibre or the 'jewellery shops and staff' readiness. The 'object' would be here the 'shop security readiness' or the 'collaboration between Jewellery Shops'. The 'outcome' targeted would be the reduction of the jewellery thefts and stability of the reputation of the country as having Jewellery one of the tourist attractions.

*Sometimes the story would be linked to the 'location' and then the 'action' that would lead to better 'outcome'. Then, in the case of the community police, the location of the Jewellery shops or the community police rounds or the police operations external security cameras would help to improve their reaction and 'capacity to protect', or 'be more proactive' against any potential risk.*

## **Socio-Economic Resource and Problem Management** ©

*Devising an innovative solution sometimes requires understanding socio-economic resources assessment. Once the resources are assessed, then the feasibility of the proposed solutions would be greater. Assessing the resources of the socio-economic problem would help us to understand the distribution of our solution, the partners we might need, and the capabilities necessary to execute.*

*Understanding the resources assessed would help to ensure the most suitable distribution, activities, capabilities and responsibilities of the problem. Failure to address a problem is considered an incredibly powerful tool for learning. In the same time, designing the experiment or the type of problem interaction, help us to build an understanding of the solution.*

*Recent studies show that curiosity about problem-finding trigger inspiration physiologically. Our mind and spirit are usually evoked by the excitement with challenges of the problem that needs to be solved.*

Only by listening, thinking, building, and refining the opportunities missed, we can get to see the way towards a clear outcome. *Early failure(s) sometime reduces latter risks. Actually, those who work for the unique socio-economic outcome should*

*consider failure(s) as an inherent part of problem-solving journey. Once a failure occurs, opportunities fussiness is reduced, since this failure would help us to keep learning, keep asking and keep testing.*

One of the examples of managing socio-economic resources to solve a socio-economic problem is the “Independent living” model. Independent living model was developed as a mechanism to measure the capacity towards meeting public sector ‘disruptive platforms’. The cases of Social Development, *Case (3)*, are actually based on the “Independent living” model. This mechanism is reflected in the rising demand for elderly caregiving while balancing the tensions of technological vs. human capital assets.

## **Creating Innovative Models for Socio-Economic Outcomes**

There are so many ways to create models of possible socio-economic outcomes, however possible model with high opportunities and clear outcomes need many testable components. *Models need to be simple which help to create a focus on testing the socio-economic critical elements.* In order to ensure the development of the model solution, we need to write down the key elements of the opportunities in the idea. *To interact with the problem effectively we need to think about the kind of model that makes the most unique sustained solution.* The model helps us to test the failures and learn from it to improve the socio-economic status.

*Models show how to utilize the different disciplinary approaches to tackle the problem more effectively.* Our knowledge becomes more advanced with the model complexity. *Having a tested model for the socio-economic issue can help unify patterns inside the complex problem.* Excessive attention on a specific model of an earlier experience with different socio-economic issues creates “mental

fixation”. Therefore, with each exploration trial, we need to find new ways to tackle the investigated problem with a model that comes as a result of the accumulated experiential learning.

*By plotting the elements of challenges, opportunities, failures and leads of the different issues of the socio-economic journey and solution attempts we can start to build up a story that can be refined and would be respected as a model of reference due to its originality.*

*The model leads to emotional experience since it triggers the visualisation and the consciousness of the brain alpha waves. By trying and making errors during the exploration of the model, inappropriate issues are eliminated to produce a differentiated outcome.*

*Once we get lots of ideas about the problem opportunities in the model proposed, it's time to combine them into robust solutions. Then it is time to move around and form more simple solutions to complex issues. By clustering similar ideas in the model into groups and then combining them with other clusters we can create this new theme of complexity to simplicity transformation. We need first, however, to start building codification and groupings out of the themes and patterns of the ideas in the model created out the problem observation journey. This should help to bundle the socio-economic ideas to bring in the best opportunities.*

*Bundling of ideas comes first from the organisation of our thoughts. This organisation is ensured by compensating for the cultural and individual differences. When compensating for the differentiated individual experiences solutions could include organisational competency solutions. While when compensating for cultural experiences one could have a broader understanding of the potential problem outcome. Bundling of ideas is not a luxury, it is an essential process that could lead to ensure the stability of the expected model outcomes in the problems solutions, or the sustainability of the decision making in relevance to similar problem models.*

*Part of the breakthrough analysis is to set a hypothesis or a proposition that explains the different observations collected.*

## **Analysing Potential Breakthrough Solutions**

*For each potential breakthrough solution, the problem priorities and values should be considered.* This means the risk of the solution involved need to be evaluated. This should help manage the potential results of each solution, both the immediate results and the long-term possibilities. The solution would be shortlisted and refined until we determine the most effective solution.

The more efficiently, effectively and quickly problems get resolved, the greater the community propensity. Achieving successful problem resolution has remained an important endeavour for creativity. There are a variety of structured and unstructured approaches that have been introduced that distinguishes the problem-solving journey.

*Part of the breakthrough analysis is to set a hypothesis or a proposition that explains the observation collected.* The hypothesis might not necessarily be always correct, but it's a starting point for unique analysis. Until one has some proof and have verified hypothesis, breakthrough thinking can't occur. Based on experimentation, anything can be done to test whether a problem hypothesis proves out to be true or false. Experiments can be simple, like just taking a measurement of something to see if it's the amount you think it is. The most important thing about experimentation is testing its hypothesis in such a way as to actually prove out whether it is true or false. Depending on the circumstances, it may take many experiments before you can conclude for sure that your hypothesis is valid.



Creating breakthrough solutions is to use the intuitive techniques through activation of an unconscious level, or overcoming of problem structures, or generating basis before using discursive techniques. Then the problem can be systematically decomposed into single parts.

In order to ensure effective problem formulation and more focused attempts to solve it in a creative way, require that we segregate ourselves from the problem. This means we need to consider the insights that might come from it and then test whether they lead to solutions. The process of carrying out the solution requires preparation, incubation, illumination and verification.

In order to develop a breakthrough, the criteria for a complex problem solution we need to return to the information generated when defining the problem. The breakthrough criteria usually would include who, what, when, where and how that the potential solutions should meet to be an effective solution to the problem.

Setting the criteria starts with thinking about what the breakthrough solution need to do, or not do and what values should be considered. The criteria for an effective solution to the problem could be extracted from questioning, i.e. the urgency of the problem? the consequences of delaying actions related to the problem? the effectiveness of the solution in relation to the trends and the directions where the problem is heading.

*An 'incubation thinking period' is a period where the problem solver would be left for a time, allow the minds to unconsciously find the best solution, or to find the targeted insight.*

It is important to think about the circumstances that would bring successful solutions. Breakthroughs bring in imagination that

help to explore the possibilities for identifying the goals, or the criteria related to the problem.

Different types of problems need different skills and approaches. Inducing problem structures needs to be followed by transformation and arrangement. The sequence of problem-solving starts with identifying the problem and then representing it, before executing it.

*In order to analyse breakthrough solution, we need to understand the main barrier towards solving the socio-economic problem. Analysis of problem-solving requires overcoming the difficulty in controlling the emotions when faced with a very difficult problem.* Emotions block our thinking and reduce our capacity to see the problem hidden opportunities.

The other barrier of problem-solving is perceiving the problem from only one perspective. This limits the solution responses diversity. In certain problem solution journey, the functional fixedness of the problem solver mind creates a focus on one aspect of the potential solution while another aspect might be more successful. This might create further deeper barriers of self-imposed limitations, or self-handicapping. These barriers create limits in problem involvement and thus prevent the problem opportunities from the exposed.

With many different solutions in hand, the problem solvers need to analyse those solutions to determine the effectiveness of each one. This module helps participants to consider the criteria or goals for solving the problem, as well as distinguishing between wants and needs. This module also introduces the cost/benefit analysis as a method of analysing solutions.

The new design approach is a substance-based design approach. Without referring the present or successful cases, we try to think the substance (purposes) of the solution and create the ideal solution, called “Solution-After-Next” for the substance (purpose). Then we will try to find the real solution based on the Solution-After-Next. In this approach, we will learn from the future substantial ideal solution, instead of learning from the past and the present successful cases.

One could say then, at least so far, that potential breakthrough solutions require thinking-forward of the potential solutions. Once all the leads are defined, it would help to be more selective towards what type of breakthrough solutions. By asking what, why, how, when, who and where we establish the details of each lead by making the final attempts at focusing on one lead.

*Another technique for keeping up with a breakthrough-solution is imagining the ‘future state’ of problem-solution which need to be benchmarked with the ‘desired state’ developed earlier in the process. Taking into consideration ‘how a potential problem might occur’ would help us to set the criteria for evaluating the solution. This exercise would help us to uncover the hidden opportunities that change the problem definition or the problem exploration process.*

Analysing potential breakthrough solutions help us to explore through the people involved with the problem to determine the specific steps which make the differentiated solution become a reality. *This analysis would help identify the critical tasks towards the breakthrough of the solution during the implementation phase.*

However, even at the solution-implementation stage, we need to evaluate the fitness of the proposed steps towards the best socio-economic outcome. Then we need to create adjustments

and re-alignments to the plan when new data arrives to improve the solution outcomes again. A final evaluation of the problem opportunities needs to be conducted before the solution outcome is generalised.

*As the brain visualise the solutions, it starts to generate mechanisms that are inherently predictive, i.e. bringing familiar solutions to the complex socio-economic problems thus leading to reinventing it.*

The creative problem-solving process identifies lessons learned and ways to make improvements for the next problem solved. *This should ensure that everyone is aware of the challenges encountered and what was done to resolve them. Once learning from a mistake or failure is cultivated, then the efforts put into solutions would be more focused and would increase our level of 'hit rate'.*

As new and complex business challenges become more widespread, everyone in an innovative organization is expected to undertake the duty and responsibility of solving problems. Leading organizations make substantial investments in developing problem-solving capacity to manage contemporary business complexity and even to ensure it has a high possibility of creating breakthroughs.

*The measure of the development of the capacity to deal innovatively towards any socio-economic issue is gaged in our ability to deal with tough problems and explore more opportunities in it. Due to the differentiated significance of each problem, it is highly recommended that each one is solved at a different level of thinking to match the level of complexity and built in the opportunities. As the more complex the socio-economic problem the more value of opportunities it carries and the possibilities of its breakthrough solution.*

*Reducing complexity is about the ability to simplify and opens up opportunities for what has been perceived as a chronic problem.*

As today's socio-economic problems are becoming more complicated, many organizations are facing stronger competition that would help tolerate less room for error. *With many different solutions in hand, the problem solvers need to analyse these varieties of solutions to determine the effectiveness of each one.* This means we need to analyse the goal for each solution and see the cost/benefit analysis.

Analysing solutions after organizing the problem information help to create the necessary proper expectations about the final problem outcomes. *In order to build an effective story outcome, more inferences are collected to ensure a comprehensive interpretation of the explored opportunities. The sets of experiences faced during the problem investigation should also lead to more accurate judgement and create the capacity to see the problem from other perspectives.*

## **Understanding the Benefits of Socio-Economic Problem**

The world needs today more dedicated leaders and scholars that study the current and the future possible socio-economic problems solutions-outcomes and prioritise working on each one of them together. i.e. selectively work on the type of outcomes that would make a difference in our societies and would create a new source of inspiration and creativity in the world; especially in countries dominated by materialism and have reached the saturated growth stage. Thus, understanding types of problem would help us to open up infinite possibilities of renewing the problem opportunities. Inferences help us to manage the

qualitative changes in the problem outcome. It also helps to improve our way of thinking and the impact of the stakeholders responsible for it. Examples of these different understanding of the type of problems are listed in the two selected cases in Table (8-3) which were taken from Appendix (2) table.

Table (8-3) Understanding Type of Socio-Economic Problem for selected cases

Socio-Economic Issue	Type of Problem
<p>Growing gap between the last three generations which is leading to:</p> <ul style="list-style-type: none"> <li>- weaker family relations,</li> <li>- loss of many unique cultural values,</li> <li>- loss of good traditions</li> <li>- loss of capital knowledge management – increase of negative waves</li> <li>- less trust between generations</li> </ul> <p><b>Case (50) –Appendix (2)</b></p>	<ul style="list-style-type: none"> <li>- Poor Communication Models/Channels in the Education System Creating Discussion Group</li> <li>- No change or transformation management plans</li> <li>- No successful models that show the benefit of synergy between the last three generations.</li> </ul>
<p>Many job seekers loss time of their productive life due to non-competent placement or counselling services, or with low availability at the right time (i.e. only available after graduation from Higher Education)</p> <p><b>Case (53) – Sub-case (1) Appendix (2)</b></p>	<ul style="list-style-type: none"> <li>- Low Competitiveness (including low availability in the right time)</li> <li>- Poor Policies</li> <li>- Low Competency of Service Providers</li> <li>- Weak Business Model</li> </ul>

The type of problem usually specifies the benefits and the type of breakthroughs the socio-economic issue carry within it. For example, the breakthrough in *Case (50)* of Table (8-3) is about the benefits of tackling the 'inter-generation gap' issue that would help in creating more opportunities to maintain, or rehabilitate the knowledge and social wealth of the community. Hence, providing the proper communication model in all the designed channels, within the community, besides the knowledge management transformation programs, within the civil society, would help to ensure the uniqueness of this community and its ability to create positive breakthrough. Same if we examine *Cases (53)* in Table (8-3), we would experience the main breakthrough opportunities and the benefits of how we create more independent business models in the mindset of each graduating student. This breakthrough benefited the total re-engineering of the counselling services of the Ministry of Labour which enhanced their capacity for discovering the job seekers strengths. The possibility of creating differentiated human capital contribution which could transform the sources for job creation over to planned career path did develop too here as a result of the breakthroughs.

The possibilities of breakthroughs are found to be highly related to the type of the problem. These possibilities stimulate our learning and add value to the socio-economic development of the community or the world. *The type of problem breakthrough helps to develop a culture of sustainable self-learning which increasingly help to motivate the citizens' engagement.* For example, the type of problem might lead to re-identifying the relation of investment trends with well-structured transport system, or the level of knowledge exchanged, or the raising community awareness, or trend of parents' search for meaningful education.

The complexity of the problem provides us with the proper and rapid learning that accelerates our contribution towards

ensuring a sound social justice and wellness that enhances our serious observations. Through the interrelationship between our investigated problem and our targeted productivity, we can increase the capacity that would assimilate our knowledge and wisdom decisions. When we understand the benefits of the type of problem we would ensure how the problem solution would help the surrounding communities in learning to live with each other, or in learning to exist, or in learning to develop, or in learning to apply, and in learning to give.

## Setting Partnership through Understanding Problem

Understanding the type of problem would lead us also to know the type of partnership plan we need to set up towards realising a sustained outcome solution. *Life has taught us that partnership and synergy between relationships towards a unified socio-economic outcome can be established based on the problem understanding. The mechanism of 'selective partnership' should help to build the spirit of synergy that supports the economy of knowledge, creativity and learning, starting from tasks that require information creation. Then the collective tasks that require the use of different knowledge at different stages of the solution application would be identified.* This spirit and this type of practice reinforce the behaviours associated with the problem motivation.

*One of the mechanisms of opening a socio-economic problem contributes to the partnership perception which can develop the ideas and the deep-seated solutions inside the problem.* Therefore, real solution partners are considered only those were involved in every step in the problem understanding and problem implementation journey.



## Role of Multi-Disciplinary Problems in Creating Breakthrough Solutions

When we investigate socio-economic problem we should aim to explore everything that affects our lives and complicate our priorities and influence our perspectives. This exploration should lead to new insight and reflection that address the concepts and values of our existence and our role in life. However, this can't be done from one perspective, or one speciality, or one discipline. *Most of the breakthroughs come from multi-disciplinary, or inter-disciplinary, or cross-disciplinary, or trans-disciplinary socio-economic issues. One could say also that we would rarely find a solid socio-economic issue that doesn't have influence, or impact, or relation to other disciplines. In fact, from experience, we usually define socio-economic issues by their influence on more than 2 to 3 disciplines.*

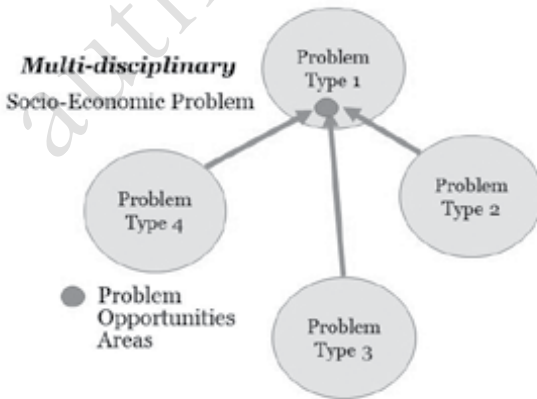
*A multidisciplinary problem usually draws from different disciplines which means we need to develop consistently its boundaries. These problems resolve real world or complex problems, which provide different perspectives on problems and create comprehensive research questions consensus. An example of this Case (23), which used the multidiscipline approach to reduce the rising traffic accidents due to drivers and road design.*

*The more our brains are challenged, the more we would have the capacity to adapt with dynamic situations. This interaction enhances our capabilities to separate between the different opportunities in the problem.*

*Understanding the difference between growth and development is what defines the socio-economic problem solution competence. When we target development while we are investigating about the problem solution we can develop the potential ability to achieve results and *develop an uplift to make an impact on society.**

*The multidisciplinary socio-economic problem can be studied within one discipline, with support from other disciplines; bringing together multiple dimensions of opportunities.* For example, problem type 1 would need to be investigated from problems types 2, 3 and 4, besides the type 1 problem itself, as shown in Figure (8-8). Hence, *we need to work into our multidiscipline capacity rather than focusing on multi-tasking which is unfortunately missed by most of the problem solvers today.* An example for this is *Case (32) sub-case (3) of the Jewellery*, where the theft of the Jewellery here is not only a security issue, but more of trust issue, collaboration, a way of a business-model and competency of staff or their moral. Hence, the problem solution should be to create more security by building more trust, more competency training, more communication between the staff, the shop owners and neighbouring shops and most of all reviewing the business model way of delivery.

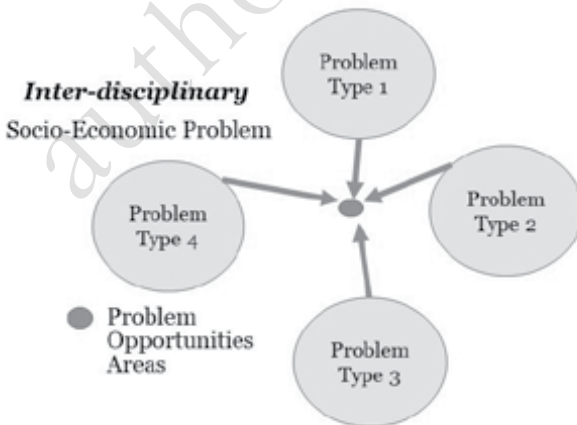
Figure (8-8) Illustration of Multi-Disciplinary Socio-Economic Problem



*Dealing with interdisciplinary problem analyses, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole. An Inter-disciplinary problem would help to transfer opportunities from one discipline to another. The problem integrates the different disciplinary approaches and methods.*

*The interdisciplinary socio-economic problem needs to be studied from each discipline, bringing together multiple dimensions of opportunities. For instance, in order to solve the problem, we would need to investigate problems types 2, 3 and 4, besides the type 1 problem itself, as shown in Figure (8-9). To illustrate this let us review the Cases (21), (49) and (53), which are all related in relevance to solving a chronic high unemployment rate among higher education graduates, which many countries are suffering from nowadays.*

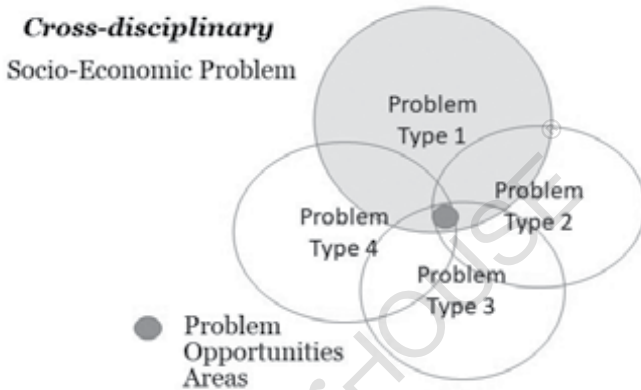
Figure (8-9) Illustration of Inter-Disciplinary Socio-Economic Problem



Cross-disciplinary socio-economic problem is a type of problem that needs to be studied at the intersection of multiple disciplines, and with the commonalities among the disciplines involved. Here, the opportunities of the problem solutions, or their outcome, would be usually in an area where all the four types of problems meet, as illustrated in Figure (8-10). To illustrate more, the rising unemployment issue of the *Case (21) of the reshuffling the opportunities of labour market*, *Case (49) of re-engineering the unemployed graduate students and the counselling services of the Ministry of Labour in the Case (53)* are cross-disciplinary with other cases as *Case (1) of education services that lead to inspiration*, *Case (2) of higher education*, *Case (11) of creating application and research during college*, *Case (15) of improving the quality of educational outcome*, *Case (20) of the multi-disciplined teaching*, *Case (37) of the socio-economic role in the school dormitory and finally in Case (45) relevant to migration of the graduating students, especially in countries as Bosnia*. In summary, cases of labour market instability and rising unemployment is highly related to cases of education and the way the wealth of the human capital is utilised in the community. Hence, governments decision makers, represented by all those leading the human capital making and optimising leaders along with employment stakeholders; need to work together in a cross-disciplinary way, to prepare more resilient human capital. Then, these governments need to collaborate in an inter-disciplinary way, to enjoy the return of the human capital; if they are really keen to solve the rise in unemployment and mitigate its negative impacts. The opportunity here is made of effective education that leads to effective counselling of the mindset and self-awareness. This leads to a comprehensive job creators and clusters of developing inspiring leaders that have follow-up programs and which ensure a realised human development. Thus, one could say that the inter-disciplinary approach would ensure the high contribution of the

community human capital as it would be appreciated to be as its most valuable asset.

Figure (8-10) Illustration of Cross-Disciplinary Socio-Economic Problem

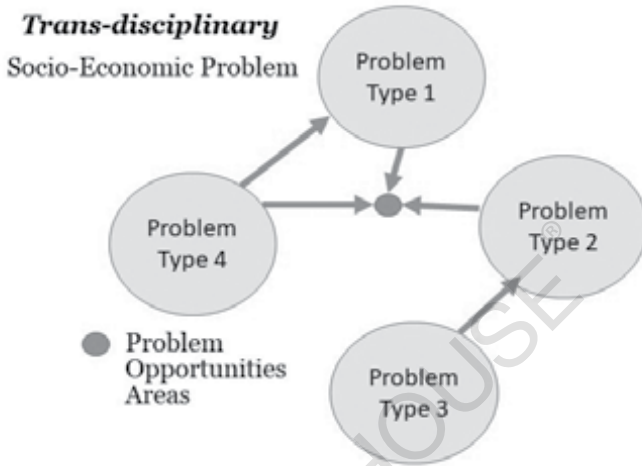


The last type of the complex socio-economic issues is the *Transdisciplinary problem*. Here the problem is a collection of different problem that might integrate economic, social, psychological and technological types of problems and transcends between their traditional boundaries. *Transdisciplinary problems* usually carry opportunities for greater outcome in what is between, across and beyond all the types of problems related, i.e. it depends on type 3 and its influence type 2 and type 4 which all influence type 1, as shown in Figure (8-11). One could claim that there are many cases in Appendix (2) which are more of an inter-disciplinary in nature. To illustrate more, *Case (52)* of the Camel Wool Carpet Factory in the capital Nouakchott in Mauritania represent a good inter-disciplinary socio-economic issue. The solution for developing the economic output of the factory focused on enhancing not the production quantity, but the differentiation of the product

using the hidden opportunities in the problem which includes the way the carpet is made, the social capital stories, the demand of the market, the socio-economic situation of the villages and the situation of the women specifically; besides the need for higher community stability and development of its goodwill. Therefore, we knew that if we manage to solve the problems in reverse way we can tackle this socio-economic issue effectively. The reverse solution started by the provision of carpet weaving machine to four women in one village, with a loan of wool enough to produce two large size carpets, which also given promise to be bought by the factory, but based on quality of netting and weaving. This project was to be repeated in many villages once it is successful. This disruptive solution of having the carpet netting done by the villages, and under the direct supervision of the factory; was the source of trans-disciplinary solution. The solution created the stories of the hand-made organic camel wool carpets and it help to differentiate its packaging. This helped to raise the price of the products automatically.

The Case (52) and its solution, dragged more inter-generation transfer of knowledge in Camel Wool Rugs and Carpets, between elderly women and youth, which were supported later by the new qualifying carpet artists and engineers. The demands on the social services allowance from those women reduced, as many of these women could work now from home (or from the neighbourhood) without the need for travelling to the capital and leaving the family. The high overhead cost on the deteriorating factory situation could be now re-shuffled, i.e. to be a source of profit centre too, as the factory doesn't need much space for production or storing. This new business model created a high economic return model, as it started different jobs in relevant to logistic, marketing, sales, quality assurance, besides custom designed carpet departments, which emphasised the benefit of the inter-disciplinary approach.

Figure (8-11) Illustration of Trans-Disciplinary Socio-Economic Problem



Whether the socio-economic issue is multi-disciplinary, or inter-disciplinary, or cross-disciplinary, or trans-disciplinary; they all require us to be precise when collecting the primary data, i.e. during the process of observation, interviews and questionnaires. *The beginning of the data collection is supposed to be related to the observations of the different related problems, i.e. to use divergent observation and thus to monitor the different related disciplines.* Both structured and unstructured observations would be needed. Sometimes both would need to be documented in a structured, coordinated and reliable manner. Part of the observations about the different related socio-economic problem can be the human behaviour, psychological status, the indicators of the trend and even the socio-political situation.

Problem solvers should differentiate themselves by the number of observations that relate the different problems and their

opportunities, i.e. the observations should help to explore the problem opportunities and may help to create conclusions or judgement for it separately from other problems and then see it again in relation to the other problems. *When observing and then exploring the problem phenomena, the results effectiveness would be the tools that connect between the different types of problems. The observation of the phenomena alerts us about the type of specific phenomena opportunity and what need to be interpreted further, and then investigated, or even integrated towards the visualised outcome.*

*'Lost opportunities' are another source of why we need to study the psychological cost of the problem, especially when the problem options cannot be explored.*

*There are levels of observations that must be observed in the inter-disciplinary problem which begin with simple notes, without the need to use scientific precision instruments to measure them. Simple first level observations are usually made by the senses. These observations are based on exploratory studies, aimed at collecting preliminary data on the phenomenon under study. The second level of observations are observing a socio-economic phenomenon, or a problem such as tracing the life of a group of individuals in terms of their behaviours, say anxiety, or heavy smoking, or gambling which could be noticed from learning the behaviour of a group, or through specific focused labs. Both levels of observations are available in the cases of Appendix (2).*

Problem solvers observations help to disclose the type of actions needed to expose the different problems, or to link them to actions after living with them, i.e. to build empathy. The precise identification and accurate observation help to visualize the big picture of the problem.



***Problem-solving Lab- Case EIGHT***  
***Self-Sufficiency & Food Security in Middle***  
***Eastern Countries***

**A) Summary of the Socio-economic Problem Story**

The villagers in the city of Miara, a name created for a country's confidentiality, suffered during the year 2008 from expensive cost of vegetables and fruits, despite Miara had many sweet water wells.

The prices of tomato, lattice, potato, orange and lemon increased, for example, 80% with no control in its coming back to its earlier average price again.

Miara is just one city of many similar ones that waked up on the international food crisis in 2007 and which had many replications in different countries. Many countries reviewed and assessed their farming and gardening practices and tried to establish a safety net from the volatility of imported food, at the same time to enhance the transformation towards a greener economy. The Miara city government being part of a Middle Eastern country, as many countries in the region, was suffering from the total dependence of food supplies from external imports, with loss self-sufficiency program.

The growing importance of food self-sufficiency program through creating a food security made cities like Miara under growing pressure to shift its practices. This was very difficult specially in a country where the city of Miara is totally dependent on oil and petrodollar. At that time Miara didn't have even a "self-sufficiency national plan", or a properly stated vision.

**B) The Classical Solution to such Problem**

The classical solution for this problem is to use of the petrodollar to both enhance the types of food imports, through different contracts with food suppliers and start farming business that would ensure enough production to the market.

**C) The Inspiring Socio-Economic Solution**

*1- Understanding the Problem Vectors*

Middle Eastern countries have always been critiqued by economists for failure in their approach in solving food security. In most of these countries, the socio-political conditions control the priorities of socio-economic efficiency.

To overcome this problem, many areas in the country need to be re-engineered; where redesigning the country's resources would help to enhance its farms' productivity.

The Self-Sufficiency challenge of Miara can be a problem for any developing country that doesn't count properly the importance of food security and its sustenance of supply. Therefore, three vectors are represented in Figure (8-12): the first vector is about 'Planned Self-Sufficiency', i.e. according to the country's weather and type of production possible. The second vector is about establishing 'Resilient Food Safety Net' to protect from sudden economic shocks. The third vector is about 'Agriculture Costing System' which is supported by the Eco-Tourism.

Figure (8-12) Problem Vectors of Self Sufficiency & Food Security- Case Study



2- *The Solution Proposed*

Self-Sufficiency is about the ability to recover quickly from the effect of an adverse incident. Miara have managed to build a resilience economy (RE) that have recovery enablers, tools and capacity that made, which made the socio-economy to leap back, based on empathetic thinking, utilising empathetic engineering, targeting to be sustainable by being self-sufficient. Today, this applies even to farmers and agricultural workers who are geographically dispersed and even may never see each other, yet they are organizationally linked through telecommunications and information technologies as they attempt to achieve interdependent organizational tasks. Miara managed to build a resilience program that starts from schools, where they have to establish self-sufficiency in one of the vegetables and fruits that the consumers in the country need.

Having a self-sufficient system means a national system which would have the ability to produce competitive products and services, in relevance to the supply of food with high guaranteed safety design to recover quickly from shocks and to withstand the effect of a shock when there are food shortages.

Therefore, the country agreed to make Miara as a model for food self-sufficiency where gardens have to contribute specific lists of vegetables that would meet the lower middle-class budget and help to maintain the general prices of similar products. The model of Miara planned fields helped to enhance not only the food safety net, but to provide eco-economy and eco-tourism options that were not available. Consideration of empathetic engineering in structuring agriculture industry in the country (A), would help to establish not only better communication relationship, but even better behaviours towards agri-productivity and effective planning for food security.

Since country (A) target to transform more towards a 'green economy', unique empowerment, training and mentorship structure need to be considered. Here, empathetic engineering was used again to build higher understanding (empathy) on what would exhibit greater positive influence on the farming and gardening of team performance. Hence, one of the solution angles was to create a holistic system of food production that would ensure an effective minimum level and diversity of green food and related poultry and dairy productions, i.e. vegetables, fruits, meats and dairy products. Thus, in another way, to ensure that more secure cycle of food production become more resilient, through the different resources, including the human capital and the knowledge assets captured over the years. The project included the provision and management of programs that enhance the bio-diversity, such as animal care, Bees farm, beautification of gardens and palaces, requirements for gardens and farms.

The promotion of bioenergy sources, such as the 'organic farming unit', was also part of the outcomes of the project, as it was under demand from both the customers and the quality of productions grading.

Focus on 'Productive Capacities Management' meant that each farm, or garden in country (A) need to be seen as an integrated cost- or profit-centre, where it would be given semi-independence in the management of farmers, technicians, warehouses, seasonal planning and in dealing with crises, nursery production and collaborations with nearby farms nurseries.

Knowledge transfer and sharing plans from the agriculture and greenery consultants to the field engineers, farmers and gardeners were set to ensure the sustenance of a holistic approach culture. A team in the field of economics and agricultural evaluation were proposed to be formulated to ensure that knowledge accumulated by the research is transferred effectively.

A national self-sufficiency program (NSSP) was proposed for government legislatures. The proposed program was suggested to be linked to the country's vision 2030. The purpose of the legislation is to support the efforts for freeing the business model of going towards the contribution of a green economy in the country's GDP with minimal bureaucracy. The NSSP detailed plans included the palaces most suitable as per the type of corps and the markets that it can be sold in, for getting the best return, and in the same time reducing or controlling the cost of the similar imported corps or food.

Through the empathetic engineering programs development of agriculture and green system found to be beyond the normal known lands, water, human capital and production economy.

The researcher found that a total revamp of the irrigation system and engineering need to be developed in a way that it would help to enhance on the return of the capital employed (ROCE), as for example in the non-calculated cost of the irrigation from the wells, besides the other administrative and technical labour costs.

### *3- Outcome of Problem Solution*

One of the main outcomes of this problem-solving project is the development of a strategic team that is multi-disciplined and highly-integrated. An agricultural economic planning team was assigned to monitor the plans for the environmental planning. Due to empathetic engineering, proper planning for new farms was given to the strategic team whom responsibility goes to product planning, planning for biological control along with prevention and planning for organic agriculture. NSSP included also planning for animal management and the generation of rare wild animals.

Due to empathetic engineering assessment, the role of the agricultural engineer (AE) was promoted towards planning the season and not only supervising it. Also, the AE was given the responsibility to balance between vegetative growth and fruit growth which in turn would enhance the country's self-sufficiency program. The AE was expected also to report about the results of the periodic examination, especially in relevance to the grading level of fruits and vegetables. This means the AE would be more accountable for the efforts taken for preparing resources in periods of land reclamation and management as an integrated project.

In order to speed up the independence of the business model for each cost centre, be it a farm or a garden, all agriculture and irrigation engineers who have over five years were considered to part of the trainers' team. This model helped to increase the quality and type of practical training while also keeping training to be an empowerment tool and part of the annual assessment. A minimum number of training hours to be received annually for each employee, were enforced.

Part of the re-design of the business model was the unification of the names of each (agricultural worker) and (farmer). This also help to enhance the outcome of productivity and its measurements. The strategic team, then set a transformation team that targeted accelerating the gradual replacement of specific foreign imported green food contracts, as per the defined 3-5-10 years plan. This was aligned with a program that focused on exploiting the green plants' nurseries capacity. To define criteria for structuring the business model for any farm, it was agreed that farms which exceed 15 acres and have more than 5 major varieties of production would have a separate cost centre.

# **III. DIFFERENTIATION OF SOCIO-ECONOMIC SOLUTION OUTCOME**

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## CH 9 – SIMPLIFY

*Complex Problem-solving  
& Differential Diagnosis*

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## Re-inventing Our Lives through Dealing with Complexities

Complex systems have always existed in history. However, only a few of fellow humans choose to deal with it or challenge it. Amongst those few also many who have got lost in attempting to manage the unpredictable, the surprising, and the unexpected. Today, complexity has spread in different areas than what it used to be, till three decades ago. Complexities started to be today, more in the way we define life and design our fate around it. So you could say that complexity has shifted from affecting large systems or things, to affecting fates and how we design our purposes in dealing with the world or 'the self'.

Avoiding complexities makes it harder for us to predict what will happen next in our life, or manage and interact with the unexpected. The more we deal and overcome socio-economic issues the more we'll find that it is becoming easier to make sense of what happens around us, even though the degree of complexity may go beyond our cognitive limits sometimes.

*The behaviour that helps us to deal with a complex socio-economic issue, helps us to start visualising its future. This type of complexity challenge makes us like the outliers that can analyse and synthesis things in different ways. Navigating complexity build in us 'profound knowledge' that gives us the capacity to closely look at what are the new complexities in our own lives and how we manage our own problems so that we address our present and future needs properly.*

*In certain complex socio-economic problems, we need to study the psychological significance and consequences of problems risks. i.e. called problem aspects and impacts, as these two factors influence the problem overall psychological cost.*

Life as we know it is a series of interactions that are divided to be mostly predictable and sometimes unpredictable. However, lives are like socio-economic problems which are made of complicated constructs that are mostly dynamic and changing frequently. However, life construct, thanks to God, like many of our socio-economic issues, operate in patterned ways. These patterned ways are called visible opportunities. These opportunities make us capable of drawing the possible interactions when they occur and thus ensure our equal capacity to use it in solving our life problems similar to other. Therefore, the results are predictable too, as the process, the inputs, the practices and outputs are relatively easy to predict.

However, like life, many socio-economic issues, in reality, become complex as they involve people, products and other causalities that lead to unstable patterns and interactions never experienced before. These interactions create feelings of the need to find independence, or a level I call interdependence, which use the profound knowledge to connect between visible and hidden opportunities. This requires, however, a diversity thinking that make us more interactive with the environment around us.

Hence, one could say that dealing with the complexity of the socio-economic issues help us move our life forward, by becoming able to predict outcomes, even without knowing the complete conditions of the problem, through always managing our interactions with the problem elements. When we manage to deal with such complexity, we would gain a capacity that would differentiate us from the rest, as we would be able to produce the outcomes due to our continued ability to adjust to the dynamic constructs of life, or the socio-economic issue under study. This can be seen clearly in the way we handle the complex problems in many of the cases discussed extensively in this Handbook.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

## **Differential Diagnosis as a Technique in Diagnosing Complexities**

“When we diagnose, we don’t give solutions”, a statement I keep repeating to myself and to our friends in order to deal with complex issues with a focused mind. With focus *during the diagnosis stage, can bring breakthrough solution*. ‘Differential Diagnosis’ (DD) is a technique that help us to focus and it was used by us for the first time in solving socio-economic issues in 2008. Many cases discussed in this handbook, and mentioned as summary list in Appendix (2) specifically, have managed to reduce its complexity through the utilisation of DD technique.

Differential diagnosis (DD) as a diagnostic technique, first used in medicine, to distinguish between a particular disease or a condition from others that present similar clinical features (Richardson et al., 2002). With DD techniques, physicians are trained during their medical studies to identify systematically the potential presence of a disease where multiple alternatives are possible. Thus, as professional medical problem solvers, they are expected to use a process of elimination that shrinks the “probabilities” of candidate conditions to negligible levels by using evidence such as symptoms, the patient’s history and medical knowledge. So, as professionals using DD; physicians are trained to confront challenges and to come up with more definitive diagnostic checks. Actually, through DD, *physicians become better forecasters of possibilities and probabilities as they gather more focused evidence to eliminate the unlikely*.

*With more DD we can increase chances of shared learning, exposure, experiences on the opportunity in the problem which enhance our agility towards creating an effective outcome, in different situations. Once people practice DD, they become effective problem solvers and they start to reap the benefits of being able to make differentiating hypotheses, experiments, drawing conclusions while using trials and errors. Through DD, the mindset would have high flexibility in doing representations of the problem which help to solve even more complex problems.*

*The brain of problem-solver would perform interpretations through analysis and synthesis which helps to create the final judgement.*

*As the name suggests the problem diagnosis is the main driver for creating any differentiation. The norm is that we diagnose only when we want to solve a problem that is initiated because of a system malfunction. With DD we use observables that are generated first from inferences and curious inquiries about the nature of things under exploration. From the integration and analysis of the observations, we get a yield that raises our intelligence in creating a selective decision (called pull thinking decision). Series of provisional pull thinking and approximations towards the best hit would yield again a revised iterative process that was totally fuzzy and hidden from the scope of our radar. Repeating this practice bring all findings, even the failures to a reflective decision that would create a legacy once it is worked on.*

There are many examples of the potential of DD as a tool to solve socio-economy problems. For example, DD has proved to help optimise the practices that increase the revenue from the annual collection of 'zakat' (Muslims self-driven 2.5% taxation scheme) as in *Case (54)* listed in Appendix (2). This was achieved by producing an increased image portfolio (i.e. in areas of cost vs. quality) of the outcome of the projects that the zakat was used

for. DD has also been carried out in problem-solving labs that meant to improve the readiness of national human capital and the knowledge assets for locals in ICT and hospitality sectors, as listed in *Case (14)*. Without DD we would not have managed to make the locals compete for these jobs in different Arab Gulf countries. Such programs, thanks to DD helped to enhance the GDP and reduce the rising rates of unemployment, despite the drop down in oil prices.

DD has helped also in creating effective industrial zones in developing countries based on the visualisation that the country would be a logistics area for many countries around the world, as in *Case (12)* which helped to create many jobs and strong logistics cluster. Through DD the return on capital employed (ROCE) in the free zone areas have increased and which helped in re-engineering the space utilisation in the limited land of Bahrain. Finally, it's worth to mention that DD can help in the global efforts of enhancing the role of small and medium enterprises (SMEs) through encouraging more focused differentiated knowledge-based economy business models, as in *Case (46)* and which is supported partially by *Case (29)*.

## **DD and the Utilisation of Reverse and Backward Thinking**

DD as a core methodology for simplifying, or overcoming complexity of any socio-economic problem, utilises to a great extent different types of thinking mechanisms. The two most important thinking mechanisms that supports dissecting a complex problem and then solving it in innovative way are: 'Backward Thinking' and 'Reverse Thinking'. Even though the names are confusing as they make us believe that they are similar, both are very different and each one have its value-added

strength that make the problem solver see the complex problem possibilities and opportunities.

Let us take first the backwards thinking, as it is easier to explain. Backwards thinking as the name suggest, means orienting the mind toward the back. If we have the socio-economic issue made of 1 to 10 points, where point 10 is final seen problem, then we would start from back, i.e. from point 9, then go to 8, then to 7 and so on. While in the case of the 'reverse thinking' we start exactly opposite way, i.e. we might start from point 10 or point 1, but in all the cases we will do the opposite practices of what we are doing now. Hence, instead for example of making the elderly reach the hospital, we would make the hospital reach the elderly, i.e. without the need to leave home. This is the sub-case (11) *Case (4)* where home visit is done for more effective elderly care and management of their pre-admissions and post-discharge, besides their quality of life programs.

Using backwards or reverse thinking open lots of comparative opportunities, that are very difficult to be seen, or be discovered, without these attempts. Here, DD would be more effective, as when the problem is more simplified, we can see more potential solutions. Then we would come up with unique comprehensive outcomes, as seen in many complex problems listed in Appendix (2).

## **Dealing with Problems in a DD Mindset**

DD usually can help us to work to resolve a socio-economic problem independently and push for the freedom of the business model in the outcome solution proposed. The independence of each part of the problem contributes to giving an advanced solution.



*Modular thinking complement a DD mindset. The application of modular thinking breaks the problem into separate pieces and structural units. The problem-based thinking units help build a common internal and stakeholder framework for problem-solving.*

Complex problems usually need to be divided into small parts and reconstructed into solutions, using backwards- or reverse-thinking. Therefore, we need to segregate the problem into parts to ensure effective problem-solving journey. Then, we need to start to explore and develop the solution continuously. This means we need to start the journey with strongly questioning the “what?”, or the “why” of the problem. Once we answer the questions we would be able to describe the idea through analysing large issues and linking it to smaller issues. Following this the differential diagnosis (DD) would start three exploratory journeys that would help to integrate the problem with its potential opportunities. The following explains the importance of each exploratory journey. These three exploratory journeys have been used in 20% of the cases listed in Appendix (2), amongst which we take here the leakage of the public water network system socio-economic problem, as in *Case (5)*.

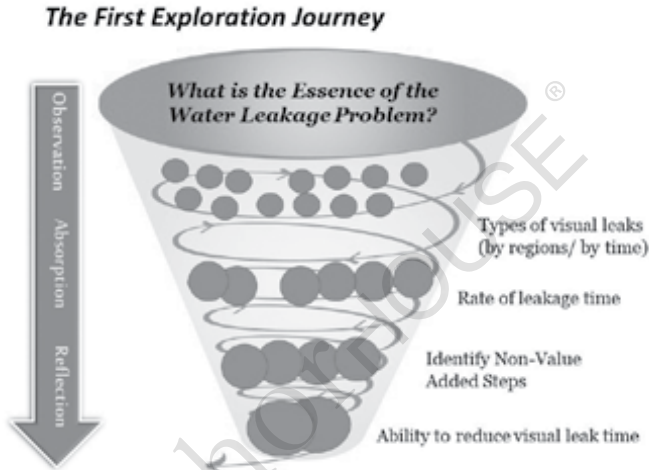
*The flexibility in the problem data collection increases our ability to respond to sudden shocks; thus taking responsible risks. This increases our accuracy to improve our interdependent thinking, humour, questioning and posing of problems.*

## **Preparing for the Exploration Journey**

Before we start with the DD journey we would need to prepare for it with specific questions. First, we would need to start by questioning what is the substance of the problem (the puzzle)? What is the perception associated with the problem? (Options

and paths). What is the equation of the problem? What is the action plan to deal with the problem? (Effective solution). Figure (9-1) shows the basic steps for preparing the exploration journey as per the socio-economic issue.

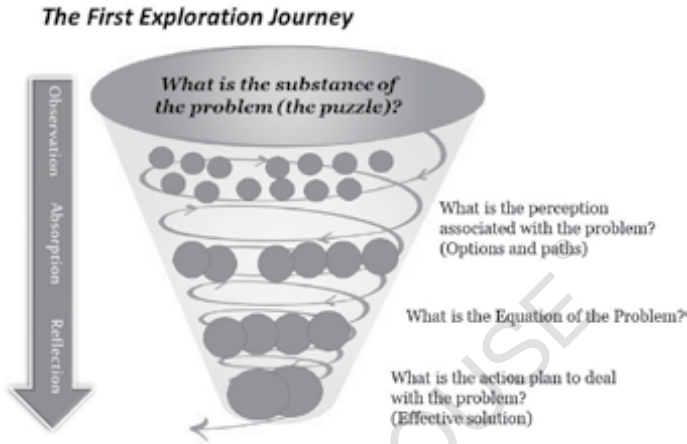
Figure (9-1) The First Exploration Journey Questions



## The First Exploration Journey

The first exploration journey in DD is the bottleneck of all the exploratory journey modules. Since the water leakage problem was very complex, a 'deep dialogue' was used to build up the first step in investigating 'what is the essence of the water leakage problem?' Then, types of visual leaks (by regions/ by time), followed by 'rate of leakage' were investigated. The non-value-added steps were identified to ensure the ability to reduce 'visual leak' and its time. Figure (9-2) shows this first exploratory journey example.

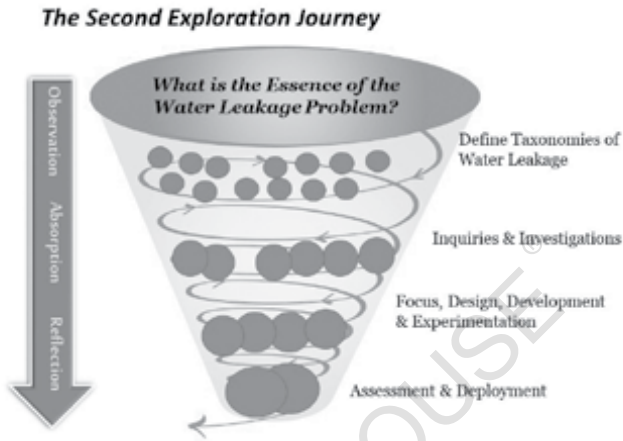
Figure (9-2) Example of First Exploratory Journey in Water Leakage Problem



## The Second Exploration Journey

The second DD journey would start with the same question asked in the first stage, which is 'what is the essence of the water leakage and how it is related to natural resources?' Then, the taxonomies of water leakage would be classified. Inquiries and investigations would be done, based on this classification. This investigation would be supported by steps of focus, design, development and experimentation, followed every time by steps of assessment and deployment. Figure (9-3) shows the total second exploration journey applied on the water leakage problem.

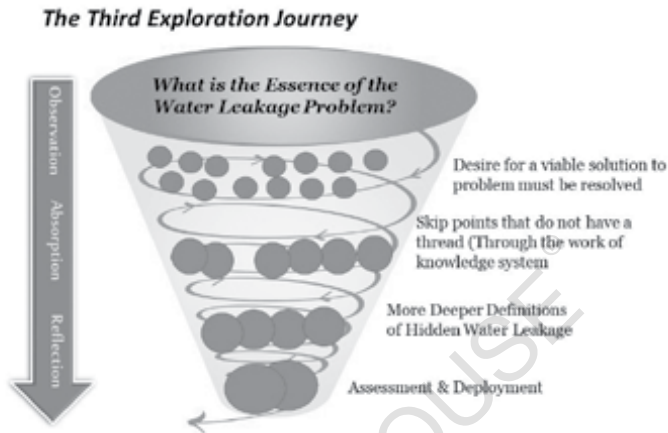
Figure (9-3) The Second Exploration Journey Questions applied to the water leakage problem



### **The Third Exploration Journey**

As we arrive into the third DD exploratory journey, the focus here would be a viable solution to the socio-economic problem where only points that have shown to have threads to the visualised outcome would be worked on. Therefore, in this stage of the journey, deeper definitions of the hidden (invisible) water leakage were identified. More assessment and deployment of testing the models would be following this step to ensure the invisible leaks are encountered regardless of the different areas and conditions. Figure (9-4) shows the total third exploration journey applied to the water leakage problem.

Figure (9-4) The Third Exploration Journey Questions applied to the water leakage problem



What differentiated the DD in the elimination of water leakage problem in Bahrain was not the exploratory journeys and the outcomes that came from it, but rather the level of knowledge that has accumulated from every experiential learning and every turn in the reversed cone models. All of these turns created a differentiated competency that made the observations, the absorptions and the reflections that came as a result of all of this unique and world class story.

## **Building of Information and Problem Queries**

*Differentiation in problem queries in the DD journey starts with investigating the problem characteristics.* Then we should build the information about the problem by what is the real purpose of our existence in this life in relevance to the essence of the problem

existence? This personal bound with the problem essence is a very important part of the DD process in socio-economic issues.

For complex problems, we need to define what is a complex problem and what has made it complex. The best thing to do is to collect information that would help to explore the variety of possibilities at the end of exploration journeys. *The problem information in DD targets to help build more knowledge about what should be done, to meet the problem purpose and what is being done, to understand the gap between the problem solver and the problem opportunities.*

*When the problem solver reach near the state of 'alternative reality', i.e. able to 'live the belief of what is visualised', a unique right feeling with deep satisfaction is reached.*

*Part of the problem inquiry is to understand the kind of stress or instability that leads to this problem and what is the problem associated with the target impact? These queries help to address why did the problem occur? Where did the problem started or developed? This should help to define what is our role towards the problem and how to deal with the problem as it is likely to be the inspiration of the mind and even inspiration of the spirit.*

## **Formula for Complex Problem-solving**

The formula for a complex problem requires a type of 'unorthodox thinking' which demands high persistence and intensity towards a novel output or value. This formula can help to reconstruct the problem itself.

*The formula of complex problem-solving is used in DD to develop the socio-economy focus. The formula start by using 'reverse thinking'*

to eliminate the causes of delays, or challenges, or stagnation in opportunities discovering. The 'reverse thinking' help to study the relations of the constructs of the problem towards: availability, effectiveness and efficiency. These constructs of complex problem-solving are called in our previous publications as the Overall Inspiration Competitiveness (OIC) Formula for any socio-economic problem. An exercise on Socio-economic formula that would help to extract the opportunities inside the complex problem is given in Exercise (1) at Appendix (3).

Through using OIC formula towards any socio-economic problem mentioned in Appendix (2) we can unleash the opportunities and raise the intrinsic capacities within the concerned communities and stakeholders in response to the rising demands. The mechanisms of complex problem formulas can start with the observation of the visual information in the problem through studying the senses reactions in the problem.

The complex problem formulas need to be clarified for its symbolic items and meanings. This should help to build up and visualise the best formula in relevance to behaviour reactions. The problem formula helps to build the relationships and the linkages that would deal with the problem complexity and its perceptions through the following steps:

1. *Define the problem through the opportunities that it can provide to achieve major goals and its initial perceptions.*
2. *Gather information by collecting sources of observations that may lead to exploring what is the "opportunity", or the opportunities that are available as the (second scenario) towards building the problem stories.*
3. *Start the differential diagnosis journey through the approach and comparison and the question of «why».*
4. *Start visualizing the solutions of the socio-economic problem.*

5. *Study the impact of the formulas (as opposed to the problem target).*
6. *Manage the outcome change needed till its sustainability.*
7. *Assimilate and try to deal with changes in the problem information.*

These seven steps would help to build the constructs of effective complex problems formula that would help to simplify it.

## **Reduction of Problem Complexity**

Opportunities for the socio-economic problem occur either suddenly or through problem-solving. These occurrences of the problem-solving journey increase the capacity to collaborate, communicate and understand. Through this learning, we can increase our metacognition to deal with any problem complexity.

*The process of complex problem-solving is divided into three main alternative roots: content understanding, domain-dependent problem-solving strategies and self-regulation.* The more people solve problems or challenges, they would find better internal motivation, or metacognition where characteristics such as self-efficacy and the ability to focus their efforts become clearer.

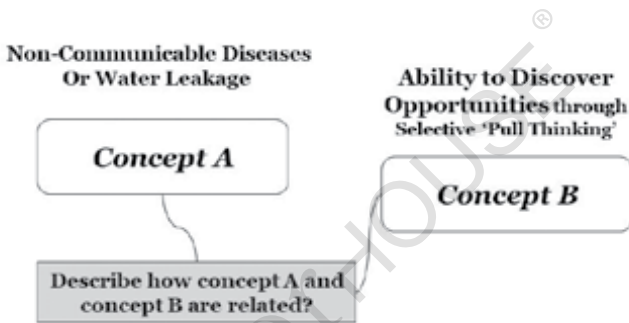
*The cycle of complex problem-solving is dependent on our feelings and how we approach the whole experience of learning and unlearning.* In order to complete each cycle effectively, we need to participate in activities such as field visits, gamification, networking, and filling in questionnaires and surveys.

*When the problem solver become psychologically fully engaged and immersed into the socio-economic issue, then his/her empathetic thinking would help to clearly start to see the opportunities hidden in the problem.*



The cycle of complex problem-solving becomes clearer with cognitive learning which helps in the active repetition of practices that lead us to identify key ideas or concepts that allow us to reach what we envisage as the big picture. *Through cognitive learning, we can link and associate different concepts that we might face in solving difficult and complex problems, as shown in Figure (9-5).*

Figure (9-5) Integration of cognitive points during complex problems



*Reducing complexity is about the ability to simplify and open-up opportunities for what has been perceived as a chronic problem. Actually, complexity often comes as a result of the expansion of the problem. One way to deal with such complexity is to streamline the problem solutions. Once we reach the realisation of problem streams and how it builds up its huge falls, then the thread can be pulled easily and the problem complexity would vanish. Hence, most of the fuzziness would disappear.*

Reduction of a socio-economic problem complexity follows four main stages as shown in Figure (9-6). The first stage is about facing the challenge of a complex Socio-Economic Issue. At this stage, the mindset is made ready for exploring through using observation of characteristics and conditions. Once the

observation is analysed, it is turned to identify opportunities which in turn lead to the evaluation of the different relations of opportunities to create the final conclusion.

Figure (9-6) Stages of Reduction of Socio-Economic Problem Complexity



*From the figure above we can conclude that any complex problem should start by identifying opportunities within the services or the products related to the socio-economic issue under investigation and which we call 'Key Business Factors'. Then the opportunities can be found by revisiting the roles of the organisation's structures, and in understanding its business processes and knowledge management practices in order to see the core capabilities at its heart.*

*While trying to reduce the complexity, we shouldn't be enemy with complex issues. From complexity, we discover great opportunities to re-examine the hurdles and challenges in the socio-economic issues. This complexity would lead us also to small steps that will bring major leaps in our socio-economy and ones that might lead to expansion and more resilience to our products and activities productivity.* For instance, once we manage to reduce complexity, we can reduce hidden costs, discover unseen blind-spots, and become more determined to restore the processes towards development. In the complex *Case (7)* sub-case (1), the scarcity of the emergency beds despite repeated expansions made the government officials more ready to change their mindset about the necessity for resources for every development. Many resources were optimised while all the concerned stakeholders as patients, families, consultants, nurses, medical registrars, etc. were all happy and satisfied. Hence, once we reduce the complexity, we will not only reduce bottle-necks and improve the effectiveness of our performance, but we would create the most important thing in any development that is stakeholders' satisfaction.

*Throughout the problem "complexity reduction" journey we should start the development of 'alternative capabilities'.* Through this journey, we can develop an understanding of what capabilities the problem really have and how it could be utilised as a valued-strengths towards a distinguished outcome.

*To combat the blocks in of complex problems solving, we finally need to ensure the proper interpretations of the problem by ensuring what this interpretation might constrain.* The objects in the problem need to be used in novel ways in order to solve the problem. The solution strategy needs to be studied also to see if it suite the level of the problem complexity. Appendix (7) set eight points that would lead to socio-economic problem solution and would simplify complex issues.

*Complexity of problems varies as per the problem condition. For example, many socio-economic problems would vary from place to place and from time to time and from circumstances to circumstances even though they are the same in nature. For instance, as in the Case (21) of unemployment. Our solution to this problem in rich developing countries would differ from our solution in poor developing or under-developed countries. Besides, each problem would reflect the attitudes and interests of the community. Therefore, it can't be explained and diagnosed by one cause, but rather by several interrelated causes. Complexity of the problems is often linked to the complexity of the social values, or the sensitivity of the public morals and the social ethics. With problems we can see the social and personal disorder as the level of corruption or the social disintegration within the society. Resilience comes here to build a pattern of behaviour that is susceptible to humanitarian intervention.*

*Complex problems (regardless of the type of society in which they appear) reveal their anti-social attitudes and values that were carried as part of their reason for existence. You can see this clearly in the cases in Appendix (2). The big data revolution brings to the government different cultural values that lead to new problems not previously faced or experienced by the society.*

We need to continue to reduce the social problem complexity throughout any journey that we target to improve the quality of life while creating more resilience. In order to manage this complexity, we need to understand the constructs of such problems.

*Problem-solving found to affect the productivity at organisational and even at national level. Problems brings important productivity factors as what, why, how, opportunities and benefits, besides barriers and trends.*

*One of the main challenges faced in dealing with complexity is how to make the problem model more independent, thus building a spirit of realisation. The constraints of the problem need to be freed in order to raise the resilience capacity in overcoming its challenges and use it for better economic development.*

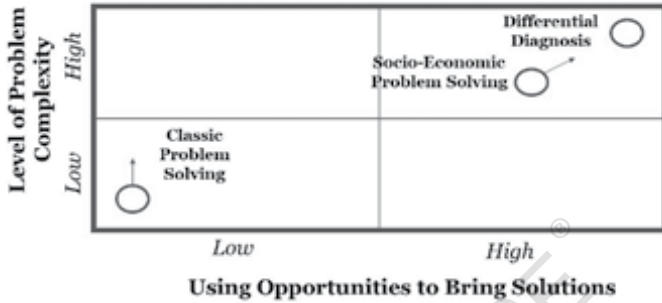
The problem is tackled with multi-disciplinary approach it would create an environment that allows us to make an association with the model to be generalised and then reflect it on what is being questioned and observed specifically in relevance to our condition.

## **Disruptive Solutions Generated by Differential Diagnosis**

In an unstable economy and in societies have turbulent challenges we need to solve problems and create opportunities in a disruptive way. Since DD, first used as a technique in medicine, it has developed to become a useful role in helping investigators to distinguish between particular cases or conditions from others that have presented similar features.

In this book, we reviewed the best practices of DD and how it is applied in medicine and then shed light on its analogical application in diagnosing problems and challenges in a socio-economy. However, the most important thing is to understand the disruptive solution that DD brings to the community. Figure (9-7) shows how *the differential diagnosis creates from the high problem complexity opportunities and which are utilised to bring further disruption to the current situation of the organisation or the community under study.* Figure (9-7) shows also how the difference between socio-economic problem-solving and classic problem-solving can cause further disruption to move with further opportunities towards a differentiated outcome.

Figure (9-7) Disruption in Problem-solving using DD Opportunities



*The disruption caused by DD help to unleash the blind-spots in any chronic problem.* To give a practical example, one of the main successes of DD in problem-solving was inspiring many of society’s decision-makers from all sectors to participate in building a national plan to achieve an impact in the ‘advancement of Bahraini women’ as mentioned in *Case (17)* sub-case (1). This had a focus on legacy-based outcomes that led to the greater stability and competitiveness of the whole of society. The program helped to produce some disruption to the government entities thus to become more outcomes-oriented and to accept to work on relevant areas as Quality of Life, Lifelong Learning, Preservation of Resources, the Knowledge Economy and the National Economy; besides Women Development.

### **Mechanics of Dealing with Differential Diagnosis**

*For every advanced tool, mechanics need to be taken care of. DD need mechanisms of problem-solving based mainly on four steps: evaluation, calculating the risk factors, setting proper diagnostic criteria and then being open-minded with regard to other conditions to consider.* DD depends on the depth and the quality of the assessment of symptoms.

For example, a physician would be expected to check the severity of breathlessness, cough, sputum production, wheezing, chest tightness, weight loss or anorexia; or a change in alertness or mental status, fatigue, confusion, anxiety, dizziness, pallor or cyanosis; or whether the patient had a chronic cough or excessive sputum production. Hence, DD opens up many possibilities for diagnosis that help in relating, or interpreting, or associating different symptoms.

DD sheds light on is the history of the case; enabling us to relate between its trends. Similar to the examples of the medical history of the patient, where patients would be checked for their allergies, sinus problems and diseases. Similar to this, the mechanism would help to use DD in reducing risk factors and minimise the patients NCDs, or the food consumers, or the graduates of higher education, or women entrepreneurs from failing to reach the expected desired outcome as per the *Cases (6), (8), (2) and (38)*. The mechanics of DD can be analogically analysed. *DD mechanism help to enhance our brain's ability to break away from logical thinking and use "backwards thinking" instead of the standard problem-solving "forward thinking"*. By using DD, *we could arrive at solutions that transcended the knowledge-based to those which were solidly grounded on profound knowledge*. Figure (9-8) shows the role of DD in problem-solving.

Figure (9-8) The role of Differential Diagnosis in Problem-solving



*Continuing to use DD surely raises our curiosity to find hidden opportunities, making us more satisfied with the opportunities we have explored. Once we deal with DD mechanisms, we would start to differentiate between those 'that have' and those 'that have not', or in another word to differentiate between what socio-economic symptoms that 'present' and those that are 'absent'. Thus the exploration not about understanding the 'presence', but more about understanding the 'absence'. This leads us to appreciate more new and profound knowledge that enhances our ability to forecast in the future and be wiser about the purpose of life.*

*The problem solver need to understand the different languages and styles of thinking in the brain in order to optimise the holistic thinking while exploring for socio-economic solution opportunities.*

Jugaad Innovation is an Indian innovation technique that is very similar to DD where both are seeking to explore the opportunities in the diversity of options. Both Jugaad and DD, ask us to try to solve socio-economic problems but by doing more with fewer resources. However, DD mechanism gives us the chance even to follow our heart instincts while acting flexibly. From problem-solving labs in Appendix (2), let us randomly choose, for example, *Case (2)* sub-case (5). In this case, we would notice that the utilisation of DD helped to develop the capacity of students and later the capacity of organisations to observe, improve and find opportunities without extra resources in graduating candidates. *Case (2)* shows that using the mechanism that DD brought helped to close the challenges of many universities who see its students' fitness or competence doesn't meet the labour market demands. The DD helped to ensure that graduating students finish the requirements of the curriculum in the planned time: i.e., within four years for Bachelor programmes, and one and half years for Masters programmes. This in turn helped to reduce the cost on



the university and government subsidised seats. The Problem-solving labs again used the 'pull-thinking' technique to improve academic advisory services and the implementation of smart registration practices.

*In order to discover more opportunities utilising DD, we need to gather all the information about the targeted sample and then create a symptoms' list; we should then list all the possible causes (candidate conditions) of the symptoms.* After this, we need to prioritise the items on the list by placing the most urgent or dangerous possible cause at the top. We then rule out or treat possible causes of the problem, beginning with the most urgent or dangerous condition, working down the list. All the cases in Appendix (2) followed this procedure.

## **Differential Diagnosis and Pull-thinking**

When dealing with socio-economic problem it is important to compare the problem results from two different samples. DD use comparative analysis and 'pull-thinking' mindset, so that the mindset is challenged to see the opportunities in the problem from different angles.

DD as a technique has been found to help investigators to challenge established facts and renew the available knowledge. The implementation of DD for socio-economic issues has been found to raise people's curiosity and to create a positive spirit that is eager to find solutions, or to explore more opportunities through making people more involved. This technique has been proved to be highly useful in problem-solving labs since it furthers our ability to make suitable observations and explore more new opportunities.

Organisational problem-solving labs, with its DD applications, aim to inspire professionals in being more agile and persistent in what they are supposed to be and/or can deliver. Through these unique DD based Labs, many chronic problems have been solved and many people have been inspired. So, the 'pull thinking' for the electricity connectivity, as mentioned in *Case (4)* sub-case (1) was to spend as much as US\$3 for supplying the panel box for each customer, to gain faster connectivity and less repetition of work. This brought an average profit of US\$100, from every customer every month. The DD made the benefits of 'pull' much clearer than the stringent 'push' mindset that refused to see the opportunity of the US\$3. The same thing was applied later in energy and water saving, in *Case (4)* sub-case (5).

*With every problem-solving cycle we are actually breaking down the mindset of scarcity by showing abundant opportunities that can be achieved without extra resources, even under very challenging situations.*

*The DD problem-solving labs are unique in discovering inspired methodologies for tracking "what to change" and enhancing the source of opportunities inside the problem.* Thus such type of problem-solving lab represents a school of thought that focuses on creating a proactive culture that addresses autonomously the community issues in the right time and in the most efficient way. For instance, interesting DD problem-solving labs were conducted to increase the survival rate of the entrepreneurs and the SMEs, especially in terms of linking with the national welfare programme that supports family start-ups and productive family programmes as in *Case (17)* sub-case (3).

Richardson et al. (2002) voiced the view that *DD is a very dynamic process which is based on an intuitive style of thinking. DD begins at the onset of the sample's presentation and directs further questioning, examination and diagnostic testing.* This understanding of DD

help to create a more unstructured approach that is continuously evolving in the search to find and explore opportunities.

## **Problem ‘Sense of Purpose’ in Differential Diagnosis**

There are many more reasons for encouraging problem-solving labs participants to ask ‘what’ and then ‘why’ sequentially to enhance their exploration experience during DD sessions. *By asking ‘what’ three times, such as: What is the essence of this activity that created such a problem? What is the purpose of the problem solution compared to the needed outcome? We are actually establishing a direction that help differentiate what is relevant to the big picture.* With DD, what and why, can increase our ability to discover our ‘intrinsic powers’ and our relevant output.

*With ‘what’ followed by ‘why’ we create a sense of purpose for the problem solved and we can have in mind the original challenge.* These two types of questions together with thought-provoking keywords create a niche for possibilities, helping us to spot more opportunities that will offer broader solutions. *‘What’ followed by ‘why’ questions has also been found to help in discovering the relation of the problem with our personal values and life purpose.*

Through DD, as we start exploring the problem with ‘what’, we can create selected observation mechanisms. These mechanisms help to create the initial focus. *This eliminate the noise distractions while generating the necessary parts of the observation and later opportunities.*

Inspiration Labs © that were developed by Dr Buheji in 2008 and were based on society’s need to increase its capacity to create problem-solving labs that leads to inspiration in different sectors.

Problem-solving labs, as a concept, are based on 'learning by doing' and they have proved to be a source of radical change. These cognitively challenging, concentrated labs utilise inspiration as a positive impact on the performances of individuals, organisations and societies as a whole. Thus, *problem-solving labs are considered to be unique, economically value-added processes and activities that carried out using unstructured, divergent and empathetic thinking that leads to revealing the big picture at the heart of any work.*

There are many communities and sectors that benefited from DD in problem-solving labs. For instance, a problem of a poor performing airline was assessed based on the capabilities of self-managed change that would save the jobs of 2% of the countries middle-class. The exploration of the performance vs. the value-added of the airline helped to improve the airline competitiveness. Many more complex socio-economic problems were faced by labs conducted in healthcare, education, immigration, social development, police, municipalities, electricity and water authorities, etc; made similar 'sense of purpose' impact.

One of the most popular 'sense of purpose' problems is the issue of the reduction of the chronic Non-Communicable Diseases (NCDs) (consisting of diabetes, blood pressure, cholesterol and obesity) in the Gulf Cooperation Council (GCC) communities. This major healthcare problem, covered in *Case (6)* in Appendix (2) focused on discovering intrinsic powers through applying divergent empathetic thinking and early detection. The main 'sense of purpose' is that this initiative has improved the quality of life and minimised cardio-vascular diseases.

Another opportunity for problem-solving labs was achieved through their participation initiatives to enhance social insurance contributions, thus aiding national economic investments, pension fund stability and general economic sustainability, as

mentioned in *Case (24)*. The impact of non-performing schools on the competitiveness of graduating students, regardless of the area of their study, was reduced as per the *Cases (15) and (37)*. The labs helped to minimise the impact of the low performing schools on the weak students overall achievements. This helped to ensure more consistent achievement in terms of the calibre of students produced by all the national schools that would be ready for the labour market.

Other DD Problem-solving labs were carried out during the financial crisis to minimise enterprises' dependency on government aid funds, as per *Case (17)* sub-case (4). In the area of the environment, Problem-solving labs were carried out to improve hygiene operations and the recycling of waste from the point of view of both consumers and waste management operating companies, as listed in *Case (18)*. Problem-solving labs also helped to enhance the Return on Investment (ROI) in fisheries and the marine food industry, as per *Case (55)*.

Value Stream Mapping was carried out as part of problem-solving labs to enhance the lead time for the connectivity of electricity and water services, thus inspiring consumers and investors to order and expect faster connections, as per *Case (4)* sub-case (1). The problem-solving labs focused on the management programme for the collection of utility bills, succeeding in reducing the unpaid government and non-government bills by more than 50% in only three years, *Case (4)* sub-case (7). Other labs focused on minimising outages of electricity and water leakages from the main supply system, thus preserving more than 25% of the wasted budget due to electricity outages or leaked water.

*Due to the curiosity of the problem solvers they would be always proactive in setting and achieving goals. However, this curiosity requires patience and calm when tackling socio-economic problems where capacity for rational and irrational decisions are needed.*

In the area of education, problem-solving Labs have managed to achieve a major paradigm shift in the way public education is managed and looked at. The labs have focused on the importance of inspiring students compared to producing competent ones as shown in *Case (1)*. The labs have also managed to raise awareness of the importance of inspired students in sustaining the country's economy. A major national project saw more than 65,000 Bahraini high school students over a two-year period participating in evaluations, interviews and focus groups; these were supported by more than 700 teachers trained in lab measurement techniques. The purpose of these labs was to have a clear impact on and shift in the mindsets of the graduates, making them more inspired and persistent. The lab focused on producing job creators, not job seekers. Problem-solving labs have also aided in re-designing curricula to focus on student creativity.

The size of the gap between national and non-national labour is a concern in almost every country today. Through the Problem-solving labs, a government plan was set up to minimise this gap by defining areas of competitiveness that the national labour market should secure through the technique of Pull-thinking', as discussed in *Case (22)*.

Problem-solving labs also were carried out to reduce the gap between requests for housing services and the time when housing was actually available as discussed in *Case (30)*. This was achieved by shifting the focus on improving the quality of life even for young and newly married couples who are offered buying public housing flats. If the results of this lab were followed up and sustained, this would solve many chronic national issues relevant to housing. Such labs would enhance citizens' acceptance that a good quality of life could be achieved in an apartment rather than a villa.

Problem-solving labs have helped to re-design Bahraini farmers' produce through establishing what was called "National Farmers' Day" as per *Case (57)*. This aimed to support the distribution chain by attracting consumers to purchase local vegetables and fruits, and arranging deals between hospitality suppliers and local farmers. The problem-solving shown by the farmers attracted their children to join their parents in the business, instead of being dependent on the Ministry of Labour to find them suitable jobs. Another project with the problem-solving lab was concerned with the investment efforts to raise the competitiveness of human capital in the hospitality business, as per *Case (14)*. This was followed by another lab that focused on re-designing unemployment through the spirit of entrepreneurship, as mentioned in *Case (21)*.

Enhancement of the sewage system was another focus for DD in problem-solving lab. The DD helped to establish preventive measures and create a blockage-free system as mentioned in *Case (24)*. The problem-solving here focused on identifying a blockage as a black spot and avoiding all the causalities that lead to making it black. This was achieved by being more proactive from the time of the design or re-design of the system. Another DD in problem-solving lab focused on improving traffic flow and the safety of vehicles through the proper management of accident black spots (i.e. areas where fatal, or near-fatal accidents repeatedly occur) as per *Case (23)*.

*Curiosity about problem-solving raise our conscious and improve the way we think or reflect. Maintaining the curiosity during the problem-solving journey help in finding faults or potential opportunities which raises our metacognition.*

In problem-solving labs, there are about 100 projects of a similar nature have been undertaken and studied through DD, although they may not all have been formalised to be properly implemented,

or written as an academic case study. Some of these, however, have achieved awards as success stories during local, regional or even world-class competitions.

## **Questions that lead to Differential Diagnosis**

*DD is about questioning, reasoning and reflecting. These series of practices make us more prone to take accurate decisions. There is no one way to creating DD, in reality, DD is about the variety of diagnostic techniques that always hard to copy when it comes to problem-solving. In fact, through DD the way of solving the problem is defined by the problem or the challenge itself.*

As mentioned earlier, DD can trigger the mind through four known key questioning words: What, Why, Where and Who. The following are examples of the differential diagnosis questions:

### Differentiation through “What”?

- What is the real purpose of the (organization) or (process) existence in this life? What to do to meet this purpose?
- What is being done in understanding the gap between our purpose and what we managed to deliver? What should be done? What else can be done?
- What are the types of waste, or stress, or instability in our business?

### Differentiation through “Why”?

- Why should we consider these services unique?
- Why this organisation does what it does?
- Why is it being done in this way?
- Why should we do it in a different way?



- Why do we need to do it in a new way?
- Why should we do something else?
- Why is there instability in this type of business?

### Differentiation through “Where”?

- Where we differentiate ourselves from others?
- Where is it being done?
- Where should it be done?
- Where else can it be done?
- Where else should it be done?
- Where is the instability in our business?

### Differentiation through “Who”?

- Who would be concerned with our socio-economic differentiation?
- Who does it in a different way?
- Who should be doing it in a different way?
- Who else can do it or should it in a different way?
- Who is causing instability in our socio-economic waves?

*We need to remember however that these questions are based on opening the ties to a problem, but in solving the socio-economic problem we need to ask again deeper questions that are based on reverse thinking. For example, we can ask about ‘where things are not occurring’, instead ‘where is it occurring’. If we take education, for instance, where the students are performing better and where they are bringing in more paths-based mind-map practices, instead of focusing on where they are not performing well, which can apply to Cases (15) and (37). Through DD we can discover many things that became hidden from our minds and created blind-spots that led to more our problems or increased our life challenges, or its complexity.*

*Bringing solutions based on curiosity prevent sources of problems to occur again.*

## **Influence of DD on Socio-Economic Problems**

From all of the above, we can conclude that DD is a way of reasoning that helps us to solve complex problems facing any organization or society. In problem-solving labs, we would be looking for developing techniques as DD, since it would help us address issues in the socio-economy that would bring major leap with minimal resources.

*The DD techniques are about 'zooming in' and 'zooming out' with more agility to check the type of observation that brings us data to codify, and then classify, to link it horizontally, to enhance our level of observation. Then we stratify this information and turn it into a hypothesised knowledge to be tested. Then we do an intervention through piloting. Based on the piloted model results we start to do reflections. These reflections help us to modify and upgrade the capacity of the model and thus put it forward in a revised hypothesis. This should lead to more accurate 'hit rate' development and selective intervention we call it 'pull thinking' that is going to create the differentiation. In summary, DD shows us how we tackle work problems with rigour investigations and in disruptive unstructured thinking to create, or find hidden opportunities that create opportunity waves in the organization, or the community*

## ***Problem-solving Lab- Case NINE*** ***Reduction of Risk of Suicide through Anxiety Management***

### **A) Summary of the Socio-economic Problem Story**

In September 2010 the suicide rate came to an alarming stage in different countries in the world and Bahrain was one of them. Many countries suffer from the increase in the suicide rate in numbers that haven't been experienced before. In Bahrain, this number reached an alarming stage between the years 2010 till 2014. Due to the high demand and pressure of managing patients at risk of suicide, the government set targets to build proactive practices within communities or organisations. Most the studies of both local patients and international research shows that Anxiety leads to many psychological diseases and out of which suicide is one of them. *Managing anxiety* in the targeted community help to design processes that eliminate cases of a 'chronic anxiety' disorder, where a healthy person deteriorates to become a patient treated with medication.

60% of the anxiety patients are between the ages of 25-45 years, i.e. age of productivity, as per WHO and Bahrain official statistics, it is from 18-40 years old. The percentage of women suffering from 'Chronic anxiety' are slightly higher than men, i.e. 52%-55% of the chronic anxiety patients are women. Despite the availability of an "anxiety awareness programme" and well trained "anxiety management staff", there are few schemes for the early detection of anxiety disorders or their mismanagement. The Government of Bahrain have taken the problem of Anxiety and its detrimental catastrophic effect seriously and requested the Psychiatric Hospital and the problem-solving expert to manage or solve this problem effectively.

**B) The Classical Solution to such Problem**

The usual classical solution for such a problem is to increase the confidentiality about the suicide news, control patients with anxiety diseases that are taking heavy medication. Besides the usual solution, the government would usually approve further expansion for staff, bed, hospital clinics to absorb more patients with anxiety. Psychiatrists would be encouraged to prescribe more heavy drugs to control patients' attitudes.

Another classical solution would be the setting up a strategic plan in relation to socio-economic factors taking into account all the (PESTEL) variables (Political, Economic, Social, Technological, Environmental and Legal conditions) that would enhance the psychiatric hospital and its staff capacity to manage anxiety.

**C) The Inspiring Socio-Economic Solution**

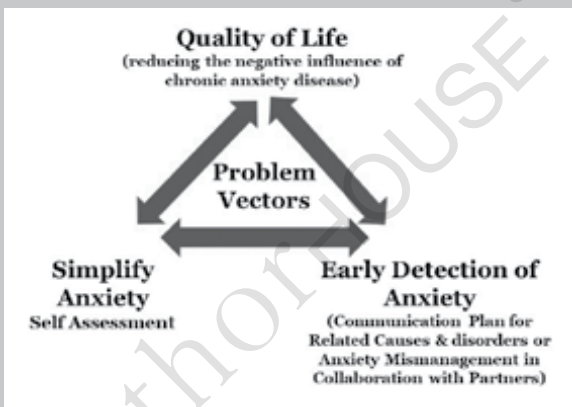
*1- Understanding the Problem Vectors*

Understanding the problem vectors and proper solution design requirements are very important for an affective outcome for a complex and highly sensitive social issue, where people have a stigma about reporting any psychiatric disease.

Set the intention to increase the capacity of the country, not only in psychiatric hospitals, for the early detection of anxiety disorders or their mismanagement. The connection between anxiety disorders with other relevant diseases in communities today were studied through actual field survey. The relations between psychosomatic symptoms and anxiety in the community specially between youth group of fewer than 21 years were identified.

A communication plan was set to connect between Family Medicine, Early Detection of Non-Communicable Disease team and those staff responsible for monitoring the use and abuse of Antibiotics projects. Three vectors are represented in Figure (9-9) to show the role of the opportunities built into the problem for the quality of life, simplifying anxiety self-assessment and early detection of anxiety.

Figure (9-9) Problem Vectors of Anxiety Management Case Study



## 2- The solution Proposed

The effect of high anxiety amongst the different categories of the society, especially amongst youth and productive ages have a high socio-economic challenge and open up many opportunities for an effective solution.

The first part of the solution started by re-defining the types of anxiety that need to be managed by health individuals daily and monitored by Primary Health Care Family Medicine teams, including health visitors and social workers. The influence of the anxiety management project was studied on the following:

- a) Its capacity to reduce any hazards that affect the quality of life of productive age citizens.
- b) The capacity to reduce the cost of the psychiatric hospital which leads to making it so resource dependent. i.e. the consistent need for increasing the number of psychologists, psychiatrists and beds in line with increasing demand.
- c) The relation between anxiety disorders, drug abuse, alcoholic diseases, apnea or sleep disorders, elderly depression, etc.

A Survey about the stigma of 'fear and complaining of anxiety' was carried out in Primary Health Centres, to family physicians, or even relatives. The results of the gap analysis indicated that there is a need for management of social anxiety, the management of seasonal & environmental anxiety, besides the management of anxiety disorder patients (through relatives and friends). One of the studies carried out in 2013 showed a correlation between the quality of life and the capacity to manage anxiety.

Another study showed the correlation of productivity outcomes and the capacity to manage anxiety in different ages of a working group in Bahrain. For example, in our case, the pilot showed that, of 400 patients in anxiety clinics, the majority (66%) were women between the ages of 40 and 54. Patients were recruited by catchment areas in health centres, educational health centres, social centres, universities and NGOs. The results of Pilot 1 showed that young people can also suffer from anxiety disorders as those aged 18 to 40 are the second most prone category.

Applying a modified anxiety scale (GAF) and a Hospital Anxiety & Depression Scale (HADS), after this has been piloted in one health centre, to all primary care centres and train family medical teams to know how to utilise it, starting with health visitors, social workers and nurses.

These scales helped to measure the results of anxiety on people's functionality and identified what needs to be flagged up. This was followed by a change management programme that targeted to minimise the impact of resistance from family physicians to follow up the GAF or HADS forms and/or results and to give treatment (without medicine). The communication plan covered programmes with communities through social media, traditional media, etc.

The 'treatment plans' were developed by both the family physicians in the primary care and the psychiatric hospital staff. The treatment plans were piloted and then communicate the results. This helped to establish a more sustained 'peer-review programme' specialising in 'anxiety management' that focuses on appreciative enquiry.

### *3- Outcome of Problem Solution*

The outcome of the problem solution helps to re-train the primary care teams (as with the family physician teams) on the use of the form and after it has been tried for 3 weeks, considering the types of challenge. Effective communication plan target to ensure that pro-activeness, positive thinking and wellness programmes are effectively carried out by primary care providers and outpatients' clinics in the psychiatric hospital.

A second outcome came from piloting a study that carries out with a sample of more than 1200 participants from different areas of society. In order to generalise the success of the 'anxiety management model', all concerned stakeholders as primary care centres, social development centres, youth and NGOs clubs, main shopping centres, etc. participated in the 'anxiety assessment surveys'. Also, all the participants were trained on self-evaluation in order to enhance their capacity to self-manage anxiety.

Part of the outcome led to establishing a “Knowledge Management Programme” in Anxiety Management that collects and transfers knowledge about the anxiety from different sources. This program should be linked to a “Lifelong Learning Programme” in the community that will lessen people’s anxiety. This should be supported by setting up an Anxiety Management Programme manuals and reference materials. Another outcome is starting an “Anxiety Management Kit” to include information on the type of diet and food to be eaten to reduce or manage anxiety. Also, clear plans are set to sustain anxiety management training by more social mentors.

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# CH 10 – TRANSFORM

*Behavioural Economics  
& Problem-solving* ©

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## Future Role of Behavioural Economics in Re-Inventing Our Lives

Behavioural Economics (BE) today is becoming a more solid branch of economics and management. BE started to incorporate the best alternatives of field experimentation and solutions of human problems from different perspectives. *BE targets to help create better life model outcome that may have not been exposed or predicted before.* Buheji (2017), Dolan et al (2010), Thaler and Sunstein (2008).

Government BE models are built around cognitive rationality that reduces the risk and the uncertainty. Such BE models come as a result of focused socio-economic labs attempts that target to identify systematic biases in a specific area. This eagerness and drive to create models are improving the government curiosity towards using scientific approaches to develop testable hypotheses and predict socio-economic behaviours. This can be seen clearly in Nudge projects. McAuley (2007).

BE also fits the efforts that come from 'inspirational observational learning' that create a practical application of 'mirror-neurons', which its existence hint and excite the brain-behavioural link. Inspiration labs (ILs) uses intentional integrative learning to build different socio-economic issues connections. These connections seemingly bring-in disparate information that create better decisions. ILs exploration journey help to diagnose the community learning needs in relevant to the socio-economic issues. The type of citizens' attitudes and behaviours formulate the learning goals and outcomes while solving socio-economic issues.

Please refer to Appendix (8) to relate between this chapter and all the other major constructs of this handbook and how they all integrate to influence re-inventing our life.

## Behavioural Economics and Problem-solving

*Behavioural economics incorporates the study of psychology into the analysis of the decision-making behind an economic outcome.* Behavioural economics, along with the related sub-fields as behavioural-marketing and behavioural-finance, are fields that study the effects of psychological, social, cognitive and emotional factors on the socio-economic issues of organisation and governments along with the different consequences that follow that process. (Sunstein, 2015).

Behavioural economics (BE) today is mostly represented by Nudge. However, Nudge is not the only representative of BE methodologies. Besides Nudge, BE has Inspiration Labs (IL's) that use socio-economic data utilizing multiple disciplined driven concepts that lead to better 'quality of life' and more utilisation of the human mindset. The most famous example of a nudge when facing socio-economic problem is when we make a design that forces people to "opt out" of default options. While most of IL's focus on the capacity of exploring and exploiting opportunities out of problems or challenges. Getting engaged with complex problems help to solve what's wrong with the more advanced tools.

Learning from previous chapters shows that uniqueness of the problem-solving techniques presented in this Handbook is highly related to behavioural economics, as they are highly related to re-inventing our lives and our communities' conditions. We can identify this relation between socio-economic problems and our lives from the six steps that are taken to solve a problem while it influences the behavioural status and capacities of those involved with it. There are two main stages, as illustrated in Figure (10-1) that deliver a behavioural status change that leads to a state where the problem solver become focused, empathetic and passionate about

realising and achieving an outcome to a specific socio-economic issue. This state is called 'Flow' as discussed in Chapter Four which is about the psychology of socio-economic problem-solving.

*Not knowing a clear path or even the outcome of a socio-economic problem when we start, raises the curiosity of learning. This would help us to come with creative solutions and pursue the outcome that we couldn't clearly visualise.*

The first stage towards applying behavioural economics for any community, organisation or individual is called the *socio-economic issue/problem identification and absorption stage* and which is illustrated in Figure (10-1). This stage has three steps which raise the BE based outcome possibility:

*Step 1- Start the process of studying and observing the problem so that our brain starts a flow of waves from and to 'frontal lobe' to make us appreciate the problem of reality and its scope.*

*Step 2- Re-define the socio-economic problem statement.*

*Step 3- Investigate the wealth of solution and the assets contained in the 'problem vectors' and its constructs.*

These three steps prepare us to start to exploit opportunities and realise their potentials towards creating a differentiated outcome in the second stage.

The second stage, as shown in Figure (10-1) prepare the outcome to *address the BE requirements and thus it is called the opportunities realisation and outcome solution stage*. This stage has three steps also which help us appreciate the BE based outcome possibility:

*Step 4- The mind start exploring the opportunities in the problem which trigger 'empathetic thinking' and get the heart to start rhythms that send different signals to the brain.*

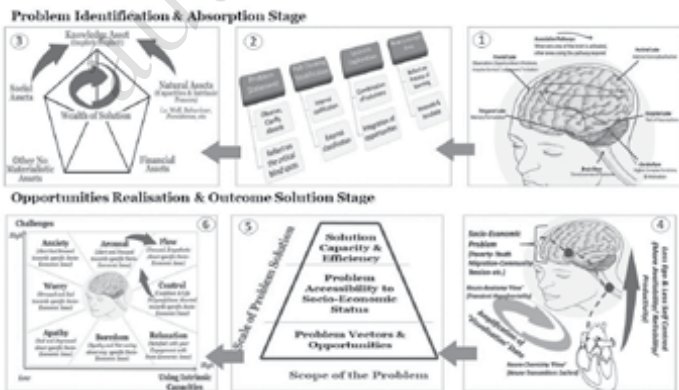
Step 5- This makes the problem solvers scale up the problem solution according to the socio-economic issue under study, which enhances the 'capacity to visualise' the outcome.

Step 6- The development of the capacity of the problem solver to utilise the intrinsic capacity of the community, or the organisation, or the individuals in relevance to the challenges and the complexity of the problem lead to the high 'inspiration state' called the 'Flow'.

Every problem needs a framework with a visualisation representation of the solution proposed. This framework of visualisation helps us to make sense not only of the data observed and collected, but in our relation to the problem.

Figure (10-1) shows the relation between the two stages and six steps that differentiate the socio-economic problem-solving from other methodologies and shows the role of behavioural economics in creating this change.

Figure (10-1) Main Behavioural Economics Stages of Socio-Economic Problem-solving



## Exploiting and Monopolising the Opportunity

Both Nudge and Inspiration Economy Labs (IL's) work on *exploiting and monopolising the intrinsic currency of the individuals and the communities while utilising the opportunities that the problem-solving brings*. Discovering and monopolising problem opportunities depends on cognitive abilities and the interaction with the problem external environment. The more the mind is integrated with social and economic factors and complexities, *the more it is expected to be developed using rational and irrational thinking. This mind integration with socio-economic problems strengthens the outcome that can be made from the correlation of the opportunities exploited.*

Once the problem opportunities are ready, one needs to ensure that they should stay clear by establishing qualified leads. The investigative curious mind of the researcher should simplify the complexity of these leads to start visualising more the hidden opportunities.

Through behavioural economics field experiments, Nudge and inspiration labs managed to change the way we see socio-economic problems and how they deal with it as opportunities (Buheji, 2017). The work of Buheji and Ahmed (2017a) report how inspiration engineering problem-solving labs changed how we could approach socio-economic problems through capitalising on hidden opportunities.

The labs as listed in Appendix (2) covered socio-economic issues in: basic and higher education, social development, electricity services, water services, primary care, secondary care, public health, health enrichment, psychiatric services, applied science colleges, industry sector, commercial sector, training & development, pension fund, quality assurance in education, labour fund, labour market authority, woman council, customs,

visa and passport services, municipality services, research and development, traffic accidents, sewage network and sanitary services, social insurance, municipalities and urban development, national centre for exhibitions and conferences, roads works, tender board, housing services, police services, ports and marine services, fisheries, environment protection agencies, Land registration, etc. (Buheji, 2016; Buheji and Ahmed, 2017a). Since 2015, IE labs have spread in other areas in the world by focusing more on civil entities services in different countries with specific experience in community involvement labs in Bosnia and Morocco.

*Designing empathetic solutions would help to manage many socio-economic challenges that are important to Sustainable Development Goals (SDG's) issues.*

## **Simplicity of Solutions vs. Complexity of Problems**

The uniqueness and latest popularity of Nudge are that bring simple solutions to solve complex problems. This is exactly what this handbook have proven for the majority of the example in the problem-solving labs too. But Nudge, is really unique in making a specific protocol that leads to community solutions by using manipulation of choice. For instance, Nudge have designed a form for patients to accept the prioritisation of beds availability for emergency cases for *Case (7)* sub-case (1); instead of doing a project that changes the mindset of all the stakeholders involved in this socio-economic issue. However, such Nudge simple solutions in certain cases are very shallow when it comes to really changing people attitudes. One could say that Nudging a solution to increase the availability of emergency beds would mean pushing the families or the patient to choose, and 'opt' to leave the hospital, as soon as they are on the road of recovery. While for in IE problem-solving labs, the problem solvers would



look for opportunities that would help to totally re-engineer the triage system, or the practices of the patients' discharge system and its relevant protocols and practices.

*Thus, Nudge simplicity comes from enhancing 'the making', or the decision making, while IE simplicity comes from enhancement of 'the factual-decision-making' and in seeing totally new solutions inside the problems and the challenges which are considered to be 'treasures of opportunities'. Both principles depend on facts and analysis of primary data that would help to direct their effective plan towards reductions of complexity, but the essence of reaching the outcome is totally different.*

Nudge simply use 'influencing with power' since the beginning. The influence of the power is done by manipulating the decisions during tackling a problem, by designing a system that influences the 'decision-making' through a technique called 'manipulation choices'. Even though it is claimed that 'manipulation choices' don't restrict the power of choice, i.e. the power to freely 'opt-out' or 'opt-in'. While the IE problem-solving labs consider the outcome is an evidence of 'influencing without power' where the simple approaches towards a sustained problem outcome are the evidence of this influence. I.e. The influence evidence is based on the differentiated change in the mindset of the individuals, or the organisation to pilot and explore the problem; with the intention to discover the hidden opportunities that would create the success story. Appendix (7) present a template for socio-economic problem solution that transforms complex issues to a realised outcome.

## **Success Stories of Behavioural Economics in Dealing with Complex Problems**

One observation on Nudge success stories is that they are not actually made in labs, but rather it is being descriptive of certain

practices and achievements of others. Moreover, most of decisions for architecting were made based on statistics.

The main acceptance of a model in inspiration problem-solving labs is dependent on its level of challenging the mindset. Tools to foster new knowledge are applied in these labs to build long-term collaborative problem-solving capacity in the targeted communities. We could understand the differentiation between Nudge and IE problem-solving labs more by seeing the following examples in Table (10-1). The structure used in this table mention an actual IE Lab relevant to the known Nudge story in different subjects, as both principles being multi-disciplined.

Table (10-1) Example of Behavioural Economics Success Stories in Dealing with Socio-Economic Problems

Nudge Success Stories	IE Labs Success Stories
<p><b><i>Private Sector employees not enrolling in Pension Fund</i></b> Auto Enrolment for Pension for Private Sector employees</p>	<ul style="list-style-type: none"> <li>• Improving Social Insurance</li> <li>• Pushing social insurance to invest in SME's as a partner to enhance the socio-economy</li> <li>• Elevate the trust of those on pension and non-pension to opt-in.</li> </ul>
<p><b><i>Encouraging Walking Decisions</i></b> Putting walking steps towards the staircase, instead of towards the lift</p>	<ul style="list-style-type: none"> <li>• Improving Quality of Life Programs</li> <li>• Family Physicians and Primary care staff define specially program for families with the risk of obesity, cholesterol, high blood pressure and diabetes.</li> </ul>

<b>Nudge Success Stories</b>	<b>IE Labs Success Stories</b>
<p><b><i>People are not Saving</i></b>                      Envelop (with their Children Photo on it)</p>	<ul style="list-style-type: none"> <li>• Enhancing Central Bank (CB) Protection of People Savings and Mitigation of Level of Debts.</li> <li>• CB investigate and calculate the risk factors for each bank and ensure its capacity to return the savings of people + ensure that banks don't further push people being on debt beyond their capacity.</li> </ul>
<p><b><i>Huge Wasted Food</i></b>                      Cut fruits in small pieces and cake (sweets) too. they add more fruits if smaller sizes                      Downsizing the plates in Buffet in the restaurants &amp; specially in hotels</p>	<ul style="list-style-type: none"> <li>• Changing Food Inspection to be Food Quality Improvement Mentors.</li> <li>• Inspectors are measured through inspiration lab to follow more mentorship and reduce food poisonous diseases through enhancing their ability to influence positive change including enhancing management of food and improving its quality.</li> </ul>
<p><b><i>Nudging Smoking Habits</i></b>                      To more clearly show the negative effects of smoking, many countries have started to add deterrent pictures on the cigarette packages with images that display damaged organs that can be a consequence of long-term smoking. This is meant to discourage people to start smoking and motivate people that are smokers to quit</p>	<ul style="list-style-type: none"> <li>• Improving Early Discovery of Lung Cancer</li> <li>• Codification, Classification and stratification of the type of smokers using gamification techniques.</li> </ul>

Nudge Success Stories	IE Labs Success Stories
<p><b><i>Nudging towards Healthy Food.</i></b></p> <p>Overconsumption of calorie-rich food can lead to a deteriorating health. In an attempt to get employees to eat healthier, a company rearranged its cafeteria. Healthy food was placed at eye-level and easily available for the visitors of the cafeteria. Unhealthy food, such as candy or snacks was placed behind the counter to make them less visible and accessible to the visitors in the cafeteria. The idea with this intervention is to encourage the consumption of healthier alternatives to improve the health of the employees. Marteau et. al. (2011).</p>	<ul style="list-style-type: none"> <li>• Re-Engineering of Services</li> <li>• There are lots of projects reported by Buheji (2016a) and Buheji and Ahmed (2017a) showed that one could use Business Process Re-engineering (BPR) to switch the consumers to a specific decision.</li> <li>• BPR could be used for enhancing the empathetic engineering for Agricultural Services thus to use the farm to enhance the government-owned gardens in planting and harvesting healthy organic food while supporting the reduction of organic food prices and giving mentorship for all retail partners interested in organic farming. This study was reported in Buheji (2018a).</li> </ul>

Nudge Success Stories	IE Labs Success Stories
<p><b><i>Developing Organs Donations.</i></b></p> <p>There is currently a lack of organ donors in many countries. One way to increase the number of organ donors could be to automatically enrol people as organ donors unless otherwise specified (so-called Opt-Out).</p>	<ul style="list-style-type: none"> <li>• Recycling Participation</li> <li>• People for the specific pilot area given choice to opt-out if they don't want to participate in the waste recycling program. 90% of the local homeowners choose to stay opt-in in the program. The program brought a profit of about US\$ 100,000 just in the first 3 months besides proven that the locals are willing to recycle the waste without the help of the government.</li> </ul>
<p><b><i>Boosting Selling of Specific Products</i></b></p> <p>Marketing specific products to enhance consumers' decisions. through Nudging consumer towards "most popular selling", "that much sold", "Discounted price for a limited time", "Game Over Scores"</p>	<ul style="list-style-type: none"> <li>• Boosting Selling for Camel Wool Organic Hand-Made Carpets</li> <li>• IE Labs in a Camel Wool Carpet Factory focused on enhancing the sharing economy of the women working in carpets by having machines set in villages rather than factory</li> <li>• Focusing on hand-made products and crafts plus organic wool value, besides building the innovative story-based packaging to boost sales in the factory.</li> </ul>

Nudge Success Stories	IE Labs Success Stories
<p><b><i>Improving People honesty about car mileage for Car Insurance.</i></b>                      Change the signing of confirming an honest information to be on top before stating the car millage</p>	<ul style="list-style-type: none"> <li>• Improving Capitalisation of Islamic Insurance Fund (IFI).</li> <li>• IFI found to have low-profit due non-optimisation of its funds. IE labs helped to improve the Return on Capital Employed in IFI.</li> </ul>
<p><b><i>Improving the Traffic flow</i></b>                      Separating between the pedestrian and pikers by small yellow tape</p>	<ul style="list-style-type: none"> <li>• Reducing Traffic Accidents while improving the Traffic Flow</li> <li>• A review of the black sports areas (i.e. areas with repeated fatal accidents, or those with a high risk of becoming so), led to the identification of specific roads designs that need to be modified and mitigate the risks that the speed and quantity of vehicles flow.</li> <li>• A countermeasure was taken for all high risk roads without main roads modification, which reduced accidents by 30-40% in almost all black spots.</li> <li>• Only 10% of the roads where re-designed.</li> </ul>

Nudge Success Stories	IE Labs Success Stories
<p><b><i>Abandoned Cart Problem</i></b></p> <p>“Abandoned cart sales” is one of the biggest problems faced by the e-commerce industry. An abandoned cart sale happens at the end of the customer journey: the customer visits the website with the intention to buy, adds the product to the cart but does not complete the transaction. the e-commerce industry is losing about \$3 trillion USD in sales due to abandoned cart sales. The average cart abandonment rate is about 68% according to Baymard Institute. Thaler suggests changes can be made to an individual’s “choice environment” to influence their behaviour to complete the transactions. The best example of this comes in the supermarket, where the attention of the consumers is drawn to certain products at the end of the supermarket to encourage them to spend more money on such products. (Sunstein and Thaler, 2003).</p>	<ul style="list-style-type: none"> <li>• Abandoned Flats in Housing Services</li> <li>• Many citizens in the rich Arab Gulf States abandon or refuse to receive flat instead of villas, due to the level of income. This affects the country economy, space, urban planning and quality of life. ☹</li> <li>• To reduce the gap between citizens’ demands and their quality of life needs, IE labs did a major improvement in Public Housing Service, where flats are redesigned according to youth or new couples, a variety of financial and non-financial service options in non-villa packages (i.e. flats) were introduced.</li> <li>• This managed to reduce the rising negative ‘social inequality’ and improved ‘social coexistence’ through post-housing services.</li> </ul>

Regardless of what is your choice of either methodology; both Nudge and IE problem-solving pushes more behavioural economics further to re-invent our life.

## Utilising BE Principle in Creating Sustained Socio-Economic Solutions

In order to reach a sustained solution that involves all the community, we need to bring in many behavioural principles that make people get involved and engaged in different ways. Many of the known available behavioural economics principles were developed over the years through observing how people behave or react towards specific problems, or challenges. All these principles depend on the issue under investigation, the situation, the type of community and other dynamic constraints.

Table (10-2) list some of the definitions of the main known principles and how they have been used directly or indirectly to extract certain insights or steps towards a solution to different cases listed in Appendix (2). For example, we see that due the principle of 'Action-Goals Gap', people actually don't what they intend to do. This led us in *Case (29)* to gear the Tender-board to do what it supposed to do, i.e. giving priority to local SME's in their tenders to ensure fair equality to local entrepreneurs and to enhance the benefits for the economy. The list if full of such solutions actions that were taken based on the intention of managing the mindset or the behaviour of the people and which enriched the final decision of the socio-economic solution.

There are many more solutions and principles that we are coming-up more every day, as per the requirements of the field, but certainly the thirty-five cases in Table (10-2) is good start for those who are keen to use both the power of behavioural economics and inspiration labs in solving complex problems and in the same time discovering how the intrinsic powers can be optimised towards breakthrough solutions.



Table (10-2) Illustrate the BE Principles Definitions and Type of Cases that utilised them in the Problem Solution Journey

BE Principle	Definition	Example Case from Appendix (2)
1-Anchoring	People are tied to their first decisions.	<p><b>Case (30)</b></p> <ul style="list-style-type: none"> <li>Keeping the Horsing Culture and Inequality level as tradition.</li> </ul> <p><i>(i.e. Predictive career path planning for all horsing culture human capital)</i></p>
<p>2-Action-Goals Gap People don't actually do what they intend to do</p> <p><b>Case (29)</b></p> <ul style="list-style-type: none"> <li>Re-Engineering the role of the tender board toward giving priority to Local SME's.</li> </ul> <p><i>(i.e. Gear Tender-board to do what it supposed to do).</i></p>		
3-Decision Paralysis	When given too many options, people tend to make the easiest decision, which is often no decision at all.	<p><b>Case (56)</b></p> <ul style="list-style-type: none"> <li>Re-design Bahraini farmers' products to be sold on specific days every weekend to avoid Decision Paralysis and enhance consumers support to local fresh vegetables production.</li> </ul> <p><i>(i.e. Ease the direction and the access to support the local products by linking it to one day a week).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
4-Availability Bias	People tend to focus on what easily comes to mind (often vivid or recent events) and give undue weight to those events.	<p><b>Case (54)</b></p> <ul style="list-style-type: none"> <li>• Managing the ‘Availability Bias’ in the Water Engineers mindset which shifted their focus from ‘maintaining high response to visible water leakage to focus on discovering invisible water leakages</li> <li>• Enhancing the capacity of forecasting &amp; intelligence</li> <li>• Re-engineering ‘Water Network System’ Intensive Maintenance Programs</li> <li>• Improvement in water pipes designs.</li> </ul> <p><i>(i.e. Shifted the focus from visible water leakage to invisible water leakage discovery).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
5-Default Bias	<p>People pick the easiest option to avoid complex decisions. Defaults provide a cognitive shortcut and signal what people are supposed to do.</p>	<p><b>Case (53)</b></p> <ul style="list-style-type: none"> <li>Applying 'Default Bias' Effect on Re-Engineering Options through New Counselling Services for Undergraduates and even High School Students to be Flexible towards Jobs Creations Not Job Seekers Fulfilment.</li> </ul> <p><i>(i.e. Shift the Ministry of Labor towards the rising University Graduates).</i></p>
6-Disposition Effect	<p>Holding on to poor investments too long and selling good investments too soon.</p>	<p><b>Case (16)</b></p> <ul style="list-style-type: none"> <li>Stopping the 'Disposition Effect' in Labour Fund by ensuring that all funded projects had made a success story through the domino's effect of Labour Funds.</li> </ul> <p><i>(i.e. Shifting the focus from disposing the money to unmeasured and resources development projects to more entrepreneurial development projects)</i></p>

BE Principle	Definition	Example Case from Appendix (2)
7-Ego Depletion	People's ability to make good decisions is based on a limited resource that can be drained by decision overload and fatigue.	<p><b>Case (17)</b></p> <ul style="list-style-type: none"> <li>• Stop 'Ego Depletion' through closing the gap and accelerating transformation towards real 'Women Development' instead of 'Women Empowerment' after 5 years from the National Plan Kick-off.</li> </ul> <p><i>(i.e. Shifting the focus from draining resources on women empowerment to shifting focus on women development and advancement)</i></p>
8-Endowment Effect	People overvalue what they own.	<p><b>Cases (19) &amp; (20)</b></p> <ul style="list-style-type: none"> <li>• Stopping the 'Endowment Effect' in Government Funded Universities and Research Centres in relevance to the value of return on investment towards projects</li> <li>• Establishment of Knowledge based systems that enhance publications value, research breakthroughs, delivery of focused change white papers,</li> <li>• Codify, Classify and Stratify the effectiveness of centres, contracts and publications of papers.</li> </ul>

BE Principle	Definition	Example Case from Appendix (2)
		<p><i>(i.e. Shifted the focus on the value of the university R&amp;D not by its reports, but by what return on investment, funded projects and breakthroughs it delivers).</i></p>
<p>9-Gamification</p>	<p>People like to play games and they will go to great lengths playing it even if all they get are points.</p>	<p><b>Cases (8)</b></p> <ul style="list-style-type: none"> <li>• Apply ‘gamification’ for mitigation of risk of poisoning from Fast Food that led to ‘Intelligent Inspection’ by Public Health Inspectors</li> <li>• Minimizes the rate of poisonous calls or low hygiene fines by 90% with minimal resources.</li> <li>• Inspectors would not be rated on their practices of inspection like policing, but rather on their capacity for mentoring and influencing Zero-Defects &amp; thus trustworthiness.</li> <li>• Good performing restaurants receive the green batch and displayed on the restaurant window, which enhance the restaurant trust.</li> </ul>

BE Principle	Definition	Example Case from Appendix (2)
		<p><i>(i.e. The game first is between the inspectors where they competed who would mentor best the restaurants to the extent they would change towards free from any poison risks. The second game is about codifying the restaurants of high hygiene and risk free with green label).</i></p>
<p>10-Goal Gradient Theory</p>	<p>People will work harder to achieve a goal as the goal gets closer.</p>	<p><b>Cases (9)</b></p> <ul style="list-style-type: none"> <li>• Use of Goal Gradient effect to target and control ‘over anxiety’ disease, towards elimination of suicides in “Suicide-Free Country” Campaign.</li> </ul>
		<p><i>(i.e. Clarify the ease of managing suicide, by managing anxiety. Then ease the self-assessment and management of anxiety to reduce chronic anxiety diseases)</i></p>

BE Principle	Definition	Example Case from Appendix (2)
11-Herding	People tend to do what others are doing.	<p><b>Cases (18)</b></p> <ul style="list-style-type: none"> <li>• Ensure knowledge sharing between Business Women, Women Entrepreneurs and Women of Productive Families Programs and specially those of the same or relevant business.</li> </ul> <p><i>(i.e. reduce the personal success drive among women, by benchmarking their on the level of their contribution to the community through facilitating, sharing and exchanging with productive families women)</i></p>
12-Hyperbolic Discounting	People put an overly high value on the here and now and an overly low value on the future.	<p><b>Cases (7)</b></p> <ul style="list-style-type: none"> <li>• Use Hyperbolic Discounting to put pressure on Medical and Healthcare Staff in Secondary Care to release patients on time through codification scoring on sticking to the ‘discharge plan’.</li> </ul> <p><i>(i.e. focus on releasing patients more and enhancing the bed turnover ratio in the hospital to raise the capacity for accepting more new emergency patients).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
13-Lack of Self-Control	In general, people have a hard time deciding between doing what's good for themselves in the future and doing what feels good right now.	<p><b>Cases (9)</b></p> <ul style="list-style-type: none"> <li>Manage 'Lack of Self-Control' by enhancement learning by doing in families and groups in the way of 'Quality of Life' practices &amp; style in coordination with Health Centres and Family Physicians.</li> </ul>
		<p><i>(i.e. Set family engagement programs that help to change lifestyle and make them realise the importance of living healthy to reduce their risks in the future).</i></p>
14-Limited Attention	People can only focus on a limited number of things at a time. This means we may miss important details.	<p><b>Cases (12)</b></p> <ul style="list-style-type: none"> <li>Using 'limited attention' in enhancing of specific investments and utilization in the industrial area of a country with the limited land through re-design of space utilization and developing strategic mapping that, enhance specific types of regional Logistics gaps as main source of the economy in the Free zone area to improve Return on Capital Employed.</li> </ul>



BE Principle	Definition	Example Case from Appendix (2)
		<p><i>(i.e. Collect the focus on the number of opportunities for the local human capital in the business of logistics).</i></p>
<p>15-Loss Aversion</p>	<p>People try to prevent losses more than they try to make gains.</p>	<p><b>Cases (4)</b></p> <ul style="list-style-type: none"> <li>• Constraining ‘Loss Aversion’ effect was used in Electricity Connections and Collections project. More discounts were applied for less consumption or fewer polluters, instead of charging more for more consumption only.</li> <li>• Closing the ‘bad debts’ used new attractive payments deals where the collections of utility bills reduced the unpaid bills and old accounts receivables by more than 50% in only three years.</li> </ul> <p><i>(i.e. Enhance the speed of collections of electric bill, with discount for those who pay on time).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
16-Mental Accounting	People categorize and treat money differently depending on where it came from and where it is going.	<p><b>Cases (25)</b></p> <ul style="list-style-type: none"> <li>Utilise the ‘Mental Accounting’ Effect to raise the trust in Pension Fund (Social Insurance) by diverting part of the investments in preparing and incubating entrepreneurial projects for those starting pensions.</li> </ul> <p><i>(i.e. Enhance the social and socio-economic influence investment of the Insurance Authority to the benefits of those going to be on pension, yet would start their own businesses)</i></p>
17-Money Illusion	People confuse actual dollar amounts with the buying power of dollars.	<p><b>Cases (4)</b></p> <ul style="list-style-type: none"> <li>Revaluating the Capability of Social Allowance Value and Entitlement – in relevance to Quality of Life priorities for the retired and the elderly.</li> </ul> <p><i>(i.e. find the influence of the allowance on raising or maintaining the dignity of the beneficiaries).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
18-Opportunity Cost Neglect	People tend to ignore what they give up when they make choices.	<p><b>Cases (1)</b></p> <ul style="list-style-type: none"> <li>This gauge of 'Opportunity Cost Neglect' was used to measure the level of inspiration for Students. How much are they willing to sacrifice to achieve a legacy or an outcome?</li> </ul> <p><i>(i.e. Measuring the persistence and perseverance of the inspiring student even with limitation of resources).</i></p>
19-Over-confidence	Everyone believes they are right and everyone believes they are above average.	<p><b>Cases (32) and (38)</b></p> <ul style="list-style-type: none"> <li>Managing 'Over-confidence' effect used in proposing the radical change done with Women Entrepreneurship + the Humanitarian Aid NGO's in order to come up with a new business-model to create realised women development with a clear contribution to the society + manage to compact poverty.</li> </ul> <p><i>(i.e. Show the differentiation of radical change on the human development and level of quality of life, after the advancement changes done in the NGOs services delivery).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
20-Pain of Paying	Some purchases are more painful than others, and people will try to avoid those types of purchases (incremental, cash, separated as a fee, and frequent).	<p><b>Cases (54)</b></p> <ul style="list-style-type: none"> <li>• ‘Overcoming the Pain of Paying’ to transform the level of collected trust on Zakat (Muslim Taxation Run by Government)</li> </ul> <p><b>Cases (4)</b></p> <ul style="list-style-type: none"> <li>• ‘Overcoming the Pain of Paying’ Techniques to ease Collection of Old Accounts Receivables in Utility Bills</li> </ul> <p><i>(i.e. Change the way money is collected from those paying for good or paying for services).</i></p>
21-Payment for Effort	People place greater value on services and products where they can see the amount of effort put into them.	<p><b>Cases (37)</b></p> <ul style="list-style-type: none"> <li>• Use ‘Payment for Effort’ effect to show the benefit and the differentiation of the ‘Non-Performing Students’ towards the society and the Socio-Economy through showing their capacity to start the micro start companies thus establishing a model for dealing with non-performing students.</li> </ul> <p><i>(i.e. Show the other values of non-performing students and their capacity to influence the society in different ways).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
22-Planning Fallacy	People consistently underestimate how long things will take and how many resources they will require.	<p><b>Cases (32)</b></p> <ul style="list-style-type: none"> <li>• Utilising ‘Planning Fallacy’</li> <li>• Mitigating the effect of many risks in relevance to police services and community security, such as reducing the criminal risks resulting from unregularly employed expats.</li> </ul> <p><i>(i.e. Raise the practice of mitigation of risks before they happen in the police stations in the different provinces).</i></p>
23-Power of Free	A price of zero is much more attractive than any other price, no matter how low.	<p><b>Cases (19)</b></p> <ul style="list-style-type: none"> <li>• Using the ‘Power of Free’ by distributing recycling coloured containers for local families and training them on how to use them.</li> </ul> <p><i>(i.e. show how much the free three colored containers have influenced the families to be more environmental cautious and reduced the cost of segregation of waste).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
24-Pre-commitment	Consequences and roadblocks you set up to keep yourself on track. These are temptation busters.	<p><b>Cases (10)</b></p> <ul style="list-style-type: none"> <li>Use 'Pre-commitment' effect to keep the Education Quality Assurance Authority (EQAA) on track and lead to ensuring that all students in under-performing school meets the minimal standard and have equal opportunities to become job creators not only job seekers.</li> </ul> <p><i>(i.e. Set for EQAA measure on the influence of its quality of the inspiration or employability of the students, regardless of the school or the Educational Institution).</i></p>
25-Scarcity	People are motivated by the shortage.	<p><b>Cases (55)</b></p> <ul style="list-style-type: none"> <li>Utilise the scarcity of quality of food by focusing on seafood quality on the weakly meal in the table of middle-class family and amongst youth.</li> </ul> <p><i>(i.e. Revived the importance of the local seafood and then the situation of the fishermen on the socio-economy and on food safety and security).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
26-Reciprocity	<p>People often respond to a positive action or gift by providing something in return.</p>	<p><b>Cases (24)</b></p> <ul style="list-style-type: none"> <li>Using the concept of ‘Reciprocity’ to eliminate sewage system blockages by rewarding contractors that implement pump designs and eliminate repeated blockages in their maintenance work while also aligning excavation work with water and electricity authority.</li> </ul> <p><i>(i.e. Created competition between contractors on best performance relevant to trouble-free installations and effective maintenance).</i></p>
27-Regret and Counterfactuals	<p>People’s satisfaction depends both on outcomes and ideas about what could have happened.</p>	<p><b>Cases (27)</b></p> <ul style="list-style-type: none"> <li>Use ‘Regret and Counterfactuals’ Impact to improve the efforts of attracting knowledge-based economy through enhancing national exhibits occupancy rate through space valuation monitoring.</li> </ul> <p><i>(i.e. Show the important of quality of occupancy of the National Exhibition Centre and how this occupancy help to build jobs and cycle the socio-economy).</i></p>

BE Principle	Definition	Example Case from Appendix (2)
28-Procrastination	People generally do not manage their time well and constantly wait until the last possible moment to do anything.	<p><b>Cases (31)</b></p> <ul style="list-style-type: none"> <li>Improve the return to the society from the Foreign affairs services by managing 'Procrastination' Effect to improve the economic role of Embassies, Instant Knowledge Sharing among Ambassadors &amp; Embassy Staff, Optimise and activate the Bilateral Agreements implementation &amp; ROI + Improve reporting system evaluation and review of lost opportunities.</li> </ul> <p><i>(i.e. Enhance the continuity and the quality of commercial and investment opportunities captured by the embassies).</i></p>
29-Relativity	People evaluate options by comparing them to what else is around.	<p><b>Cases (32) sub-case (6)</b></p> <ul style="list-style-type: none"> <li>Using 'Relativity' to measure and compare the outcome of creating "Self-Dependent" youth in the 'Police Youth Summer Camps' which is held for 3 weeks compared to other active youth programs run by Ministry of Youth and Sport</li> </ul>



BE Principle	Definition	Example Case from Appendix (2)
		<p><i>(i.e. The differentiated effectiveness of the 'Police Youth Summer Camps' program is measured based on its influence on youth self-confidence in short time, in comparison to other leading programs).</i></p>
<p>30-Reward Substitution</p>	<p>Immediate rewards, which appeal to people's impulsive nature, for behaviours that are actually good in the long run.</p>	<p><b>Cases (13) sub-cases (5&amp;9)</b></p> <ul style="list-style-type: none"> <li>Using 'Reward Substitution' for encouraging families' business and new entrepreneurs to get-in and register free for programs that would ensure the smooth transition of businesses from 2<sup>nd</sup> to 3<sup>rd</sup> generations and support socio-economy sustainability.</li> </ul> <p><i>(i.e. ensure early family governance programs supported by the government to ensure more stable economy).</i></p>
<p>31-Self-signalling</p>	<p>People behave in ways that reinforce the type of person they believe themselves to be, even if no one else is around to witness it.</p>	<p><b>Cases (36)</b></p> <ul style="list-style-type: none"> <li>Use 'Self-signalling' to encourage young girls' involvement in Woman village activities and thus ensure the sustenance of knowledge transfer of hand-craft and traditional arts.</li> </ul>

BE Principle	Definition	Example Case from Appendix (2)
		<p><i>(i.e. Build profitable, yet smooth knowledge transfer program between elder women with handcraft accumulated experience and new generation).</i></p>
<p>32-Status Quo Bias</p>	<p>People are pretty committed to keeping things the way they are.</p>	<p><b>Cases (41)</b></p> <ul style="list-style-type: none"> <li>Overcoming the ‘Status Quo Bias’ in initiating projects that improve the quality of life of families in the Amazigh Villages through eco-tourism and small family businesses that enhance their independence and counter poverty through raising their capacity to make a better profit margin.</li> </ul> <p><i>(i.e. Shift the focus on the capability of the Amazigh Villages for Higher Profit Margin that would improve their stagnant quality of life)</i></p>
<p>33-Sunk Cost Effect</p>	<p>Once we invest in a particular path, our commitment to it grows.</p>	<p><b>Cases (42)</b></p> <ul style="list-style-type: none"> <li>Use the ‘Sunk Cost Effect’ to Build more focused positive psychology waves of Radio &amp; TV program that raise the aspiration of the society and build trust in the future of the socio-economy of the country in collaboration with Youth and NGOs.</li> </ul>

BE Principle	Definition	Example Case from Appendix (2)
		<p><i>(i.e. Do management of change in the North Bosnian Media through designing programs that spread the positive aspirations and give more examples on youth).</i></p>
34-Tunnelling	<p>If it's an emergency, we can only think about the emergency.</p>	<p><b>Cases (46)</b></p> <ul style="list-style-type: none"> <li>• Overcoming the 'Tunnelling Effect' that made the most popular Water Spa in Bosnia to focus on normal physiotherapy services which deteriorated the reputation and the profit margin of the community.</li> </ul> <p><i>(i.e. Return the focus of the community SPA on its main source of strength, i.e. thermal mineral water and capitalise on it, instead of turning towards the quick wins of physiotherapy).</i></p>
34-'What-The-Hell-Effect'	<p>People give up on getting back on track.</p>	<p><b>Cases (45)</b></p> <ul style="list-style-type: none"> <li>• Mitigation of Migration amongst Bosnian Youth through the management of 'What-The-Hell-Effect'</li> </ul>

BE Principle	Definition	Example Case from Appendix (2)
		<ul style="list-style-type: none"> <li>• which focused on showing aspiration projects of those stayed home and improving the Youth Quality Life and understanding migration options.</li> </ul> <p><i>(i.e. Give examples of the ability to come back from abroad and invest in the country).</i></p>
35-‘You Are What You Measure’	People repeat behaviours that are rewarded, regardless of whether those are what causes success.	<p><b>Cases (48)</b></p> <ul style="list-style-type: none"> <li>• Managing to the compact management of change for implementing disruptive teaching techniques through using ‘You Are What You Measure’ Effect.</li> </ul> <p><i>(i.e. support students of such multi-disciplinary courses by open exams).</i></p>

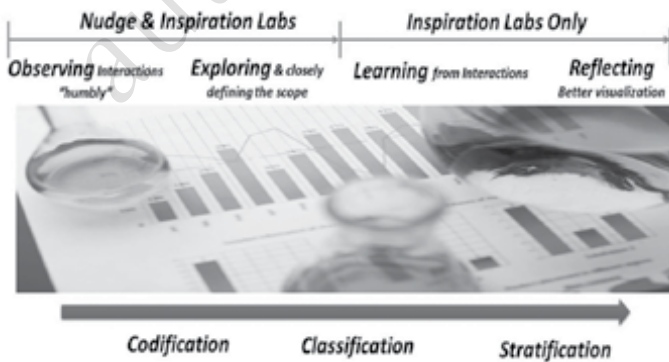
## Process of Exploring Opportunities of BE Change

Referring to the literature and the comparative tables (10-3) and (10-4), shows that both Nudge and IL’s first create a type of codification that helps to better absorb the scope of the alternative business model; which was not foreseen in the scope of the service under study. Both, Nudge and IL’s, would start a classification process, after codification is done, where they would be able

to further develop the capability of interactions of the people involved, through piloting the proposed solutions in different settings and environment.

When the BE process is closely evaluated for both Nudge and IL's, one could see a clear differentiation in the socio-economic problem solved. As shown in Figure (10-2) where both Nudge and IL's goes through similar first two steps of their process, i.e. during observation and exploration of the opportunities that would bring in the behavioural change. However, problem solving labs (IL's) would further than Nudge, i.e. it wouldn't stop at the end of 'exploration point', but it would take actions about the proposed 'behavioural patterns' that are disrupted. *It is believed therefore that IL's seem to give the problem solver more capacity to stratify the complex socio-economic problems compared to Nudge, once the learning and reflection stages are reached. Here, the problem solver would have more clarity about the visualised outcome of the socio-economic issue as illustrated again the Figure (10-2).*

Figure (10-2) BE Development process and where both Approaches of Nudge and Inspiration Labs meet and/or differentiate.



*When BE models are alive in the targeted government organisation, they would be more competent to confront adversity, or challenges that are faced by, or reflected on the beneficiaries.* Positive BE models create a sort of empowering waves that prepare the government organisations, or the community to develop their capacity in comparison with the expected demands.

Both BE techniques in this study found to be superior in certain characteristics when their influence on government services are compared to the specific scope, as the welfare system, that leads to better quality of life. *Nudge is found to be faster and simpler for government programs, but IL's create more effective and deeper mindset changes.*

*The superconscious mind in the heart helps to explore the problem opportunities and bring insights into creativity. The problem solution creates inspiration and inner fulfilment.*

At the end of the day, BE is considered now a clearly unique socio-economic development opportunity for all entities. Through BE programs, we could optimise the spirit of scientific exploration after investigating the type of behavioural change. At this point, we could start to deliver opportunities that would lead to best outcomes. Great community transformation could occur, if BE is systematically applied and where the multi-disciplined field approach is institutionalized in its culture.

Many communities related organisations, including governments, have now greater choices in solving chronic issues in many important areas while also being more able to promote socially desirable citizens' behaviours. For example, Nudge could be used to encourage participation of positive behaviours that would enhance the social welfare. While IL's could be used more to solve chronic problems that could not be solved with such

behaviours, or they would need time or resources if to be solved. Both techniques would help to build some proactive community entities and better citizenship that brings in welfare measures before problems occur over time.

The comparative data used in the handbook shows the effectiveness of the sequence of field experiments and observations on the mindset of both individuals and organisations. This handbook carries within it many practical approaches and attempts that show the 'big picture' of the outcome of many sides of BE approaches. All the BE and IL's approaches help to keep up the spirit of curiosity and open up variety of solutions to problems, while striving towards the best outcome in the most efficient way.

More studies are expected to come that would continue to focus on the importance of the field experiment labs, and in different countries, and in a variety of fields, i.e. as in healthcare, or education, etc. Studies as observing the socio-economic issues that comes from the citizens' behaviours are reflected in Appendix (5). The appendix (6) criteria of the socio-economic problem-solving labs projects are helpful for the community and concerned organisations as governments and NGO's. Understanding and practicing these criteria would make all those concerned with the stability of the socio-economy to start thinking in a different way.

BE help also to create a 'pull thinking' in the decision-making process. This specifically can be seen when the governments, for example, decide where to capture opportunities, in order to create the targeted behavioural change. Thaler and Sunstein (2008).

*Once we start to collect the possible opportunities in the problem we could manage to link between the pieces of information, using different observational analysis techniques, and a type of thinking*

*that help us to focus on the essence of the service itself.* This type of thinking helps decision-makers to see or visualise the future and thus weight the 'present benefits or costs' compared to the 'future benefits or costs'. For example, many governments spend millions of dollars annually on encouraging people to take flu prevention shots to reduce absenteeism, however, one could see opportunities in people not attending to such vaccination for specific demographics and explore techniques that would alter those vulnerable of deteriorating conditions, or diseases if they catch the flu. Sunstein (2013).

*With the development of Behavioural Economic and Neuro-economics, we need to look at empathy applications and the possibility of engineering the problem in a more serious way.*

Once any community or socio-economic influencing entity builds passion about the essence of the services, they could revolutionise their delivered outcome. This radical change can go to the extent they could do this codification and classification, then they could also build a holistic understanding of the process of change and then move towards finding even more differentiated outcome. These models could be then used to change people assumptions about life and enhance their involvement in their socio-economic issues.

Once could say then that both Nudge and IL's focus on doing something unique that would create better citizens' behaviour. According to behavioural scientists, such BE projects or labs are good for both the government and the society. However, the two BE techniques can be clearly differentiated in the way they tackle their problems. Nudge projects which are usually led by behavioural scientists in Nudge Units would usually start with the selection of scope of the choice architecture which is



represented by, for example, setting the citizens choices for Opt-in or Opt-Out.

From the above discussion we learn that we can shift any socio-economic issue towards better outcome and create from it a success story if we could discover its threads of acceptance and what variables that would lead to provision of higher availability towards the socio-economic challenge before it becomes a chronic high risk in the society.

Figure (10-3) shows how the socio-economic problem-solving labs start exploring for the opportunities in the issue from the field. This would ensure the beneficiaries about the essence of the socio-economic challenge. *The first behavioural change towards this level of mutual agreement starts with involving the concerned parties in discovering the opportunities and then in turning it into a realised state by building a model that targets specific outcome.* Buheji and Ahmed (2018).

Figure (10-3) Illustration of the Characteristics of both Nudge and IL's in their role of Creating Success Stories



## **Re-Designing Problem Solution in a Sharing Economy**

Problem-solving tools and methods are usually implemented to connect between different issues and patterns in order to reach creative ideas and sustained solutions.

With the trend of transforming toward a 'sharing economy', problem-solving has been developing so fast recently to positivity influenced many 'communities' behaviours. Applying many 'sharing-economy models' during visualising a problem solution outcome, as the model for 'doing and creating businesses' from things that we don't own; managed to raise the attention towards utilising more economics tools in problem-solving. Also, it proven that major socio-economic changes can happen, with minimal resources. Thus, this led to better market solutions, along with development of many essentially needed services, improvements of many welfare conditions, equilibrium of supply and demand; besides creating more profit with less cost to different stakeholders. Sharing-economy solutions also managed to shape the behaviour of many communities, even to those opposing it, and managed to control their greed.

When faced with a problem, the sharing-economy human mindset tends to follow more 'abundant thinking' patterns. The problem solver here try to utilise the negative experience and the previous knowledge on the socio-economic problem and turn from it the abundant solution. The sharing-economy solution disrupts the common patterns solution which usually would limit the human brain to reach creative solutions. For instance, in *Case (52)* in Appendix (2) the concept of sharing-economy is used to convince the Camel Wool Carpet Factory owners to see the benefit of the social capital in improving the

return-on-investment and improving the profit-margin for all the stakeholders in Mauritanian community.

*The unique application of empathetic engineering in problem-solving can help us see the 'big picture' when tackling any sensitive issue that is needed for the benefit of a nation or a community.*

*A sharing economy mindset would break away from existing assumptions that usually limit the ability to find more socio-economic creative solutions that come from different perspectives.* For example, in *Case (26)* we started exploring the extent of the utilisation of facilities in limited resources communities which opened different perspectives and helped to develop tools that can be used to utilise the sharing opportunities the limited space and facilities utilisation bring. This helped in redesigning the public buildings for schools, hospitals to create more multi-purpose buildings owned by the government and measured for its rate of occupancy and utilization

One of the best examples for the role of sharing economy in socio-economic problem-solving is Uber. Uber brought socio-economic solution which overcome the regulation and the norms that controlled the wellbeing and the complexity of life long time. Uber used sharing economy to bring interdisciplinary thinking solutions. These interdisciplinary thinking solutions are made of Uber philosophy, understanding the social needs besides the economics history. Uber have established a socio-economic solution that is linked to different people, economy and society.

The unique Uber solution is that influenced and developed our societies and changed its behaviour to accept sharing as a concept. Bringing such solutions to any socio-economy builds collaborative and cooperative practices and which build more entrepreneurial

spirit which helped in building more welfare promotion and maximization.

Even though many Muslim communities, for example, have been innovative in implementing sharing economy solutions through the concept of Waqef (Endowment), Uber sharing model now open for them, as for the rest of the world, more possibilities. Uber opened other possibilities to other religions and more believers too, on how to optimise their trusts foundations.

Sharing economy used to solve the socio-economic issue even before they occur. For instance, when a family have a land, or even kitchen, or a well, or even a plate that is over their needs the Muslim communities, up to a century ago, used to put it as a Waqef (an Endowment). Through such mindset, many socio-economic solutions could be developed. For example, due to the scarcity of the land for Muslims in Bangladesh, or even in a developed country as Canada, where lands in certain provinces are becoming very expensive, the Muslims would share the small lands for one body to bury more than one body at different graves levels of heights.

Through bringing in more volunteer groups that affected the market of the taxi, Uber created and managed to set a good example of the way that socio-economic problems could be solved. This type of 'pull thinking' economy managed to create more realisation about the importance of solutions using and sharing extra access, re-defining the individual ideal inventory or capacity vs. increasing the individual financial access and ownership. Uber economy opened the possibility for socio-economic solutions that deal with societal population density while addressing challenging issues as services sustainability, desire for community, overcoming government strict unjustified regulations. Uber used both lack of trust between sellers and

buyers and sellers' data in order to disrupt the market with its proposed business model.

*Social integration raises the spirit of curiosity and make us see the socio-economic problem from different resilient points and then propose solutions that take into account 'social cohesion', 'strong institutional foundation' and 'culture of acceptance'.*

The variety of disruptive innovation that used some of the sharing economy and created global companies as Pizza Hut, Amazon and Tesla Cars created even more disruptive solutions that release more entrepreneurial driven projects. Such a model could be modified to deliver many services and solutions that improve the socio-economic conditions of many communities. Concepts like crowd-funding have managed to utilise Uber sharing-economy model and now is replacing many mediators with more efficiency and speed for project funds delivery, with transparency on realised projects outcome. Such solutions, make us consider that sharing- economy can unlock the capacity for any practice, or discipline through capitalising on values as a driver for better solutions. Through sharing-economy, we can learn more how to use the supply side as a unique value that enhance the outcome solution. This can be seen clearly in Case (41), in table of Appendix (2), where improving the 'quality of life' of the families in the Amazigh villages, would be coming from the sharing-economy environment that could come from everyone and every family in the village. Moreover, the unique collaborative environment from every family in the village is what would help to differentiate its eco-tourism. This type of mindset could even trigger small families' businesses project and thus would help to alleviate many families' conditions from living in poverty, or in low quality of life.

Uber and many similar projects that followed the same principles like Airbnb; brought the same sharing-economy solutions to

different industries. They brought even more practical solutions that can utilise the consumer demand to bring more learning and prosperity for the community, or develop attitudes and behaviours that encourage more sharing, relations and responsibilities through using an outcome driven formula that uses: (Empowerment with Tools + Market Linkages+ Civic Engagement).

Therefore, sharing-economy can bring many socio-economic solutions to developing countries where they could cater for more elderly and disabled people as in *Case (3)* sub-cases (1) and (4). The sharing concepts would also help to develop more 'necessity entrepreneurship' solutions which would surpass financial support and would ensure their sustenance in business even in turbulent economies.

One of the methods to find solutions and creative ideas is to connect prior ideas with other incidents or elements available in the community. For instance, in order to spread the spirit of aspiration and focused positive psychology, the youth of Bihac are starting to deliver positive stories, based on the outcome of change initiatives, in collaboration with the Bosnian Una Sana Canton Radio & TV. As reported briefly in *Case (46)* of Appendix (2) such programs helped to raise the aspiration of the society and trust in the future of the country's socio-economy.

## **Welfare Problem-solving and Behavioural Models**

According to their analysis, money spent on nudges can in some cases be more 40 times effective than dealing with scarce resources. Chetty (2015). Buheji and Ahmed (2017b) also shown that the outcome of government productivity is beyond quantitative returns, in comparison to 'the Return on Capital Employed'. IL's also manage to improve the targeted community

culture towards being more proactive and efficient in their hit rate and in dealing or solving different issues.

Today, one could hear more behavioural teams are formed as part of the ministerial and/or state level. These scientific teams provide not only strategic guidance for the government, but in fact, work on capacity building through innovation lab and rigorous testing in relevance to citizens' behavioural characteristics and required change.

Change to a welfare situation in a socio-economy requires dealing with a mindset that goes beyond the economist arguments, rational or irrational behaviours, or its influence techniques, on public policy or services development. Therefore, dealing with assumptions, attitudes and behaviours in 'welfare services' should be still the most important aim and should be more examined through the lens of multi-disciplined social scientists. Actually, it should go beyond the academic circles, especially if BE models are to tackle complex issues, as improvement of a country's 'quality of life' and 'welfare system'. Chetty (2015), Keating (2013).

Role of developed governments is to establish a welfare system and quality of life net that would determine the best optimal policy that would deal with the possibilities of behavioural biases. With the turbulent socio-economic environment, contemporary time have shown that the challenges to social welfare programs do not depend only on governments experiences in dealing with the welfare issues only, but on how governments can practically tackle the consistent behavioural change and challenges. Buheji (2016) and Sunstein (2014).

Most important needs for any society is to improve the quality of life of its citizens and specially for the most vulnerable ones through focusing first on the effectiveness of the social welfare services delivered and what is relevant to the quality of life.

Today, literature have enough data to explore the different BE projects carried out by governments or similar community related organisations with the intention to improving the outcomes of social development. Therefore, the comparison tables (10-3) and (10-4) in this chapter targets to focus mainly on projects related to inter-related services of Social Insurance (Pension Fund), Social Development and Healthcare Services. Buheji (2016) and Sunstein (2014).

*It is natural that with using modular thinking we can eliminate any focus distraction which is very important to the process of observation and selecting the opportunities with a level beyond accurate forecasting, called here intelligence. With modular thinking, we can re-design organisations or bring in different solutions to create a differentiation and then legacy.*

In certain highly developed countries as Norway, the social security system is linked with processes of pension, social welfare and healthcare services to help improve the return-to-work outcomes. An example of the benefit of integrating these services is illustrated through the return of holding just one meeting between the employee, the employer, and the treating physician. The behavioural move of just holding such meetings led to enhance the employees returning to their job 10 days faster than those that didn't get such service. This off course has a very positive impact on the socio-economy. Keating (2013).

*Since almost all governments spend lots huge time and money annually in dealing with socio-economic issues, especially with vulnerable cases, or in caring or treating people, and most of the time get involved with problems that could've been preventable, BE and IE problem-solving Labs comes as a highly alternative solution to deal with such environment. Therefore, the following tables (10-3) and (10-4) give examples of the published work of both BE techniques under study Nudge and IL's for the three services*



that are considered one of the main pillars for social welfare that usually lead to better quality of life in any community or country. The following are the list of tables for both Nudge and Inspiration Labs that link between the type of government services problems/ challenges and the outcomes or the success stories achieved.

**A) Nudge List**

Table (10-3) Selected Nudge List in Government Social Welfare Services that lead to Quality of Life

<b>Type of Government Services</b>	<b>Nudge Success Stories</b>
Social Insurance (Pension Fund) <i>Keating (2013)</i> <i>Sunstein (2014)</i> <i>Thaler (2015)</i> <i>Thaler and Sunstein (2008)</i>	1-Private Sector employees not enrolling in the Pension Fund. 2-Government designed an Auto Enrolment (Opt-In) for Pension for all Private Sector Employee with provision for Opt-Out only based on the request.
Social Development <i>Keating (2013)</i> <i>Thaler and Sunstein (2008)</i>	1-People are not Saving 2-Government would provide Envelops to the poor family to encourage savings (with their Children Photo on it).
Healthcare Services <i>Keating (2013)</i> <i>Sunstein (2014)</i> <i>Thaler (2015)</i> <i>Thaler and Sunstein (2008)</i>	1-Low Belief about Organ Donations There is currently a lack of organ donors in many countries. One way to increase the number of organ donors' government introduced automatic enrolment (Opt-In) for all the people, i.e. all the citizens are considered organ donors unless otherwise specified to (Opt-Out). 2-Encouraging Walking Decisions To reduce Obesity and Cardio-Vascular Diseases, people are encouraged to exercise more, i.e. as in putting walking steps towards the staircase, instead towards the lift.

Type of Government Services	Nudge Success Stories
	<p>3-Nudging Smoking Habits            To more clearly show the negative effects of smoking, many countries have started to add deterrent pictures on the cigarette packages with images that display damaged organs that can be a consequence of long-term smoking. This is meant to discourage people to start smoking and motivate people that are smokers to quit.</p> <p>4-Nudging towards Healthy Food.            Since overconsumption of calorie-rich food can lead to a deteriorating health, governments are attempting to get employees to eat healthier, by rearranging the cafeteria and supermarkets. Healthy food is to be placed at eye-level and easily available for the visitors of the cafeteria. Unhealthy food, such as candy or snacks was placed behind the counter to make them less visible and accessible to the visitors in the cafeteria. The idea with this intervention is to encourage the consumption of healthier alternatives to improve the health of the citizens.</p> <p>5-Nudging Medication Decisions            Patients are motivated to adherence to take their heart medication, especially in chronic diseases, on time even if they do not experience any symptoms by employing a combination of small financial incentives for scheduling cholesterol appointments (\$5 gift cards or lottery draw) along with a type of (Post-it note reminders) describing the consequences of not taking the medication. This strict adherence to medications reduced emergency room visits and hospitalizations by 30%.</p>

Type of Government Services	Nudge Success Stories
	<p>6-Reduction of Medical Treatment Cost through increasing Generic Drugs-Prescriptions.</p> <p>Prescription of expensive brand-name rather than generic drugs is nudged through an electronic medical system that is defaulted to give the equivalent generic drug when the drug brand name is typed. To override this default, i.e. keep the brand name for certain patients, the prescribing doctor needs to check a box labelled “dispense as written.”</p>

***B) Inspiration Labs List***

Table (10-4) Selected Inspiration Labs List in Government Social Welfare Services that leads to Quality of Life

Type of Government Services	Inspiring Labs Process
<p>Social Insurance (Pension Fund)</p> <p><i>Buheji and Ahmed (2017a)</i></p>	<p>1-In order to attract more participants to the pension fund, the government started a lab for the selective investment of pension fund that would enhance the productivity of the national economy and Local Market Stability</p> <p>2-Develop pension fund for social responsibility where lower pension participants are more prepared for entrepreneurship after retirement.</p>

Type of Government Services	Inspiring Labs Process
<p>Social Development <i>Buheji and Ahmed (2017a)</i></p>	<p>1-Improving the Quality of Life of the Elderly and the Geriatric Care Homes through exploring the human and social asset intrinsic powers ability and maintaining effective Day-Care Home, instead of permanent residency. 2-Improving the capacity of the productive family program to be more self-independent and attractive for more family members to join as full-time employees/ owners 3-Building stronger family businesses that have higher Return on Capital Employed (ROCE). 4-Enhance the return from Elderly homecare production 5-Enhance the quality of Disabled Production</p>
<p>Healthcare Services Primary Care <i>Buheji and Ahmed (2017a)</i></p>	<p>1-Early detection of Non-Communicable Diseases (NCD's) (Diabetes, Blood Pressure, Cholesterol and Obesity) 2-Enhancement of Quality of life through the development of Families Physicians team program 3-Practicing Triage to establish priority cases system 4-Early detection of Psycho-Somatic in relevance to Anxiety in Health Centre. 5-Optimising the role of Social Workers and Health Educational Specialist and Health visitors in family screening 6- Enhancing patients time spent with physicians</p>

<b>Type of Government Services</b>	<b>Inspiring Labs Process</b>
Healthcare Services Secondary Care (Hospitals) <i>Bubeji and Ahmed (2017a)</i>	1-Improving the total throughput in Accident & Emergency and admissions in Hospitals based on Urgency of the cases 2-Enhancing the availability of the Capacity of Beds Utilisation by inspiring towards higher discharges on time and based on defined protocols & followup services 3-Reduction in Antibiotics prescription and use in the main referral hospital
Healthcare Services Public Health <i>Bubeji and Ahmed (2017a)</i>	-Establishing 'Intelligent Inspection' that minimize the rate of poisonous calls or low hygiene fines by 90% with fewer manpower resources & trustworthiness enhancement. -Enhancement of reputation of fast food services that supports local tourism. -Intelligent inspection based on pull thinking and lean management that enhanced the outcome of hospitality services and with minimal resources.
Healthcare Services Health Enrichment <i>Bubeji and Ahmed (2017a)</i>	Enhancement of 'Quality of Life' practices & style in coordination with Health Centres
Healthcare Services Psychiatric Services <i>Bubeji and Ahmed (2017a)</i>	1-Improving the self and health centres capacity to manage the anxiety to avoid reaching the level of chronic anxiety 2-Reduce the need to treat anxiety with medicines. 3-Reduce suicide ratio due to early treatment of main causalities among youth.

<b>Type of Government Services</b>	<b>Inspiring Labs Process</b>
	4-Reduce the patients' sick leave due to self-assessments of psycho-somatic symptoms

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## ***Problem-solving Lab- Case TEN*** ***Fresh Water Leakage in Countries of Water Scarcity***

### **A) Summary of the Socio-economic Problem Story**

It is unusual to find water leaking issues in the mountains; whether the mountains were in Europe, Nepal, India, China... etc. And even if you hear about water leakage issue in these countries, you'd think it's part of the environment equilibrium process. In the same time, it is really unusual to accept fresh water leakage in countries where water is a scarce resource. In different developing countries, this leakage might be seen in the main highway roads; mainly for two reasons, one due to blockage of sanitary system, or two due to fresh water leaking from the main fresh water supply pipes, which in most cases has to be reported by the public, or discovered by the water authority inspection unit.

Losing a very precious natural resource, as fresh sweet water, even in rich developing countries, like Bahrain, does not only influence the environment, as it means more water need to desalinated from the sea, to meet the demands of both: the utility consumers and the leakages in the network. However, what's more catastrophic is if this issue has been a trend in the country. As water leaking in a warm country directly affects the socio-economic life; stopping most of the main activities in the country and where the weather reaches more 40C degrees, in most of the year.

Annually, the government spent about US \$10 million on maintenance of the water network and piping system. Besides, the water been subsidised by the government, i.e. 20-35% of the cost covered by the government. Now the government buy most of its desalinated water from new plants that were established by third-party international companies to meet the expansion demands.

In 2012, it was estimated that water leakage accounts for one-fourth of the amount daily-produced to the consumers. 20% of the amount of fresh water comes from what is left of the water wells in Bahrain, the rest (80%) desalinated from the sea directly.

### **B) The Classical Solution to such Problem**

Before starting the inspiration labs this problem was approached by the water authority in the following ways:

- 1- Annual maintenance budgeted for more than US \$20 million for replacement of old pipes.
- 2- An increase of water leakage inspection of 10% in manpower and budgeting.
- 3- Many advanced troubleshooting equipment are purchased to support monitoring and control of the water network system.
- 4- Government put an increased budge for subsidising the cost of water produced and leaked from their own water production stations or for purchasing more water from third parties.
- 5- Government desalinate more water from sea and also treat the wells for better production.

### **C) Inspiring Socio-Economic Solution**

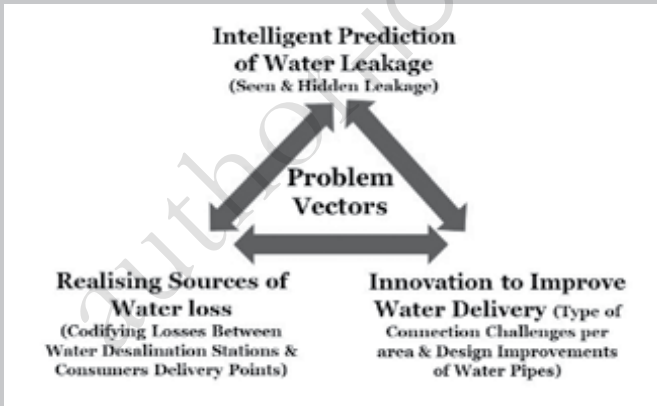
#### *1- Understanding the Problem Vectors*

Minimising loss in the utility water supply network means we need to enhance our ability to discover early underground leakages through observation, and then through forecasting the lost opportunities that make us manage or control any leakage potentials before it occurs. i.e. non-availability of a high level of intelligent decision-making system is considered one of the main causes of this problem.



There are three vectors which are represented in Figure (10-4) that are important towards an effective outcome. The first vector is about Intelligent Prediction of Water Leakage (Seen & Hidden Leakage). The second vector is about realising the amount and sources of water loss in the country, because of system leakage between the source (the main water desalination stations) and the delivery points (customers' water input points); despite an increase in the maintenance budget for water pipes and the overall water network. The third vector is about the innovation to Improve Water Delivery (Type of Connection Challenges per area & Design Improvements of Water Pipes).

Figure (10-4) Problem Vectors of Water Leakage Elimination



## 2- The solution Proposed

In order to see the socio-economic opportunities in this problem, the problem solver and the investigation team started a journey for understanding the taxonomy of 'water loss' and its differentiation from 'water leakage', then applied this differentiation to check the difference.

In order to outline the problem, construct the team codified the type of water loss in the network of Bahrain. Then, classification of the categories of water loss in the network in terms of place, time, type of area, pipe designs and detection equipment were carried out by the investigation team. The team also has gone into specifying the relation and the correlation between seen and hidden water loss (both from an analysis of previous history and field observations).

The investigation started piloting projects in three main areas/types of water consumer: old areas, new areas, large consumers. This was followed by trying to understand the attitudes related to the problem-solving through understanding the socio-economic problem-solving expert identified the types of emergency readiness relevant to stopping water loss (both the seen and the hidden). The average length of time taken to rectify a loss of water by type and area, besides the type of field response team needed were classified. Another deeper classification for all the challenges in compacting water loss was regarding the type and amount of consumer areas, the age of the water network, the level of consumption, the type of real estate (i.e. normal domestic consumer, public consumer or private company, etc.) were carried out.

Using both convergent and divergent thinking to explore and stratify the opportunity from the water loss issue helped to categorise the type of challenges in each area and segregate the issues of illegal connections that count for part of the water loss problem. This innovative attempt to solve the problem led to improvement in the design of specific water pipes for tight areas which would be unique in size and thickness; these include characteristics to make them flexible yet robust.

The types of defects in water meters that lead to slow detection and hence slow response of the emergency team were identified. In six months, the team built a totally new attitude towards responding to the places where leakage occurs inside houses. The trends or area of water leakage repetitions, in relevance to the types and ways of connections, were carefully studied. This was the first step towards building a 'Water Loss Intelligence Programme' that will enhance later the Water Authority capacity to respond, proactively, to any potential water loss, on time, and with high availability, better efficiency, and more effectively. This led to applying a 'Mitigation of Risks Programme' to support the 'Water Loss Intelligence Programme'.

Note: This was a real project that was applied in one developing country and water loss reduction reached 70%, as a result of Problem-Solving Labs and Inspiration Engineering.

### *3- Outcome of Problem Solution*

There are many outcomes for minimising or elimination of water leakage to ensure realising the impact of the problem on natural resources in the future. The water authority started reasoning the types and amounts of leakage by the level of building heights and the size of the population. This use of reasoning helped to re-engineer the process of water loss and water leakage and led to increase in the impact of the response team. The response team was better trained on lean intervention where teams would be deployed to effectively isolate the area network from the main water supply network with higher availability.

As a result of the many non-resource dependent improvements, the water authority is now more efficient in managing the water loss and more accurate in detecting both the visible and invisible water loss. Some minimal resources later were utilised; as water loss detection equipment in areas that are prone to experience hidden water loss due to their history, type of design, and forecast data.

# FINAL WORDS

Since its inception, the *International Project of Inspiration Economy* has been using *Socio-Economic Problem-solving* to address issues and challenges that can help develop communities and humanity to a type of thinking that would 'Re-Discover' or 'Re-Invent Our Lives' in a way never been addressed so deep before. The uniqueness of this handbook is that it brings to both the general public and those interested in getting involved in solving their communities' challenges to new ways of thinking about what are the values that can come with any socio-economic problem. *The handbook focuses directly and indirectly on dealing with the way we perceive a socio-economic problem and then, shows with evidence, how all type of problems can be sources of inspiration, or discovering new missing, or invisible opportunities that can change our lives positively.*

*The uniqueness that this handbook brings is the new ways of thinking about what are the values that can come with any socio-economic problem.*

Each socio-economic problem is identified through 'field investigation', or what we call IL Problem-solving Labs. These labs are like projects that work to create reference models for the success stories that are created when we overcome socio-economic problems. Each of these stories is usually published in the academic literature, or through Inspiration Economy and/or Behavioural Economics Forums. Example of one style of

these socio-economic problem-solving lab workshop is shown in Appendix (5) and all the socio-economic problems discussed in this handbook are listed in Appendix (2).

*The general reader and even the experienced problem solver would have seen by now that the techniques used in this handbook even though followed general rhythm, each one of them was developed based on the socio-economic issues and based on the conditions it was developed or evolved in. Therefore, this handbook presented many problem-solving techniques that are beyond abstraction, analogy, brainstorming, dividing and conquering, hypothesis testing and lateral thinking. We have even used many types of observations techniques that are also beyond means-ends analysis or morphological analysis. The techniques that benefit the community are used in reducing complex problems and to create different outcome solutions. They are unique and the credit goes for the decision to stick to the 'field'. Where the field is the real expert of life, where we learn from it every day.*

If one has to leave a final word for the reader to remember, it would be a sincere recommendation to getting involved in our world Socio-Economic issues and challenges where-ever we are and whatever the condition around us is. It is through this involvement we could discover our life-purposefulness and from different angles. It is really a great blessing opportunity to be able to re-invent our life and the life of our community during the journey of this life. As Figure (FW-1) try to send to your visual mind, socio-economic problem-solving labs presented in this handbook are not only a mean for just solving and realising the world around us, or understanding the complexity of relations of things, or even understanding the human side of the problem. It is, in fact, a highly dedicated intelligent thinking, yet simple technique that would use a collection of many of the constructs discussed within this handbook to bring in the

'hidden opportunities' inside each challenge we face in life. It is an experience worth attempting and worth living for.

Figure (FW-1) Represent the Constructs of a Socio-Economic Problem-solving Experience



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# APPENDIX

## Appendix (1) Socio-Economic Conditions as a Reference for Problem Solution Outcomes

### Introduction

The purpose of this appendix is to give the reader and the problem solver the ability to visualise the outcome of any socio-economic solution proposed before starting the solution process. Such socio-economic conditions can create the story the problem solver can use even in the initial steps of the diagnosis. Through such outcomes, we can raise the bar to bring in innovative social and economic solutions. These five outcome solutions examples are exhaustive and there are many more similar outcomes that could be visualised depending on the nature and complexity of the problem. However, it is highly recommended that the new socio-economic problem solver start with these listed here and then develop his visualised outcomes gradually.

### A) 'Quality of Life' Outcome Solutions

***Aim:*** The aim of 'Quality of Life' outcome solution is to find an effective apparatus to improve the outcome of a problem-solving in issues related to social, health, psychological and environmental conditions. The solution should help to achieve a dignified, safe and stable life for every individual and family in the community and promote better patterns of life practices by providing more options for citizens and beneficiaries of such solutions.

**Areas of solution:** Healthcare, Education, Economy, Environment, Family Stability.

**Objectives:**

The objectives of Quality of Life (QoL) are:

1. To protect the society from non-communicable diseases and their complications as a shared responsibility among all groups of the society, through the optimal use of resources to reduce diseases, mortality and disability due to non-communicable diseases and its complications, with the participation of all governmental and private institutions within the concept of partnership in community health.
2. To protect, rehabilitate and improve the environment through sound environmental management and promoted community partnership.
3. To build community reassurance and continuity in securing the needs of the family and enhance its health and psychological integrity through family cohesion and self-reliance.
4. To enhance the 'quality of life' through the provision of multi-model transport and the development of infrastructure and services that support the promotion of health and environmental health and reduce traffic injuries and reduce transport related emissions.
5. To provide the best types of housing services suitable for citizens with low incomes to ensure their stability and achieve a decent livelihood.

**Summary of Quality of Life Indicators targeted during Solutions**

1. The percentage of chronic diseases for different age groups
2. Average age of Long-term mental illness rate
3. Environmental pollution ratio

4. The percentage of family stability achieved
5. Equal opportunities between genders
6. The average waiting period for obtaining housing service according to priorities and in a way that enhances the stability of the family

### **B) 'Lifelong Learning' Outcome Solutions**

***Aim:*** The aim of 'Lifelong Learning' is to find an effective apparatus to improve the outcome life journey. One of this apparatus goals is to engage citizens in socio-economic problem-solving issues. This is found to contribute to building a culture who are always distinguished by its continuous learning and its pursuit of lifelong learning and through practices that ensure the quality and continuity of teaching and learning and the transfer of experiences and knowledge at all ages to ensure self, professional, community benefits from what is around it continuously, and learns from the past and the present to shape the future.

***Areas:*** Continuing education, in-service training, self-learning, adult education

#### ***Objectives:***

The objectives of Lifelong Learning (LLL) are:

- 1- To spread the culture of sustainable self-learning through increasing and motivating citizens' motivation to learn, integrate programs and partnership between institutions, thus achieving their integrated personality.
- 2- Invest in the training and qualification of cadres in the society and promote the transfer and exchange of knowledge and marketing globally.
- 3- Raising awareness of the importance of continuous education through knowledge management and sustainability.



- 4- Enable citizens at all ages to be educated and qualified and able to learn and self-development and keep pace with development.

### **Summary of 'Lifelong Learning' Indicators targeted during Solutions**

1. The rate of turnout programs for self-education by citizens.
2. Percentage of centres and specialized sources available to the citizen for self-learning.
3. The rate of increase in exchange programs knowledge and experience among government employees
4. The percentage of expertise contributing to regional, Arab or international work programs.
5. The rate of increase in competencies and cadres participating in programs for continuous learning.
6. The rate of increase in opportunities for continuous learning.
7. The rate of turnout of educational and rehabilitation programs aimed at obtaining specialized degrees outside the context of formal and formal education.
8. The proportion of increase in parallel educational programs for university education and beyond.

### **C) 'Knowledge Economy' Outcome Solutions**

***Aim:*** The aim of 'Knowledge Economy' outcome solution is to find an effective apparatus to improve the outcome of a problem-solving in issues related to: create an economy that is based on the value-added of knowledge assets (both explicit or implicit assets). The other aim is to transfer, create acquisition and generation of renewable knowledge through which sustainable competitiveness is achieved. The other aim is to retain the knowledge development through the application and then estimated of the human assets and national knowledge.

**Areas:** Utilizing the knowledge accumulated, houses of expertise and consultancy, innovation, scientific research, research and development facilities, creative economy projects, universities and colleges.

**Objectives:**

The objectives of Knowledge Economy (KE) are:

1. The ability to properly access and use knowledge to enhance the competitiveness of institutions in providing their services locally and globally.
2. Increase knowledge and develop tools to support the management of national knowledge assets.
3. Building closer links between academic and research institutions that promote high creativity and innovation in the shortest possible life cycle. (Details in the example of the Competitiveness Lab with the Internet Exchange and the Higher Education Council).
4. Giving maximum importance to education and raise the skills of the workforce.
5. Raise the use and proper employment in information technology and explicit knowledge in all transactions between institutions, each other with citizens through the extrapolation of public opinion and measurements of customer satisfaction and so on.

**Summary of 'Knowledge Economy' Indicators targeted during Solutions**

1. Increased rate of utilization of knowledge assets that have been economically exploited (increased income or expenditure).
2. The rate of increase of integration projects based on knowledge sharing among government institutions.

3. The rate of increase in sustainability of types of knowledge assets in government institutions.
4. Percentage of the increase of educational programs, applied and professional oriented to the importance of the exploitation of knowledge.
5. The rate of increase and diversity in the records of experience houses annually.
6. The rate of increase in mechanisms for the exchange of knowledge practices (successful and failed).
7. Civet rate of competitive services provided (in terms of efficiency and effectiveness of the service) compared to cost and time.
8. The rate of increase of applied research common between the government and scientific research institutions.
9. Rate of implementation of institutions for research and development (according to the national plan approved for scientific research.
10. The rate of increase of projects based on coordination / partnership between scientific research institutions on one hand and institutions on the other.
11. The rate of development in the skills and experiences supporting the knowledge economy.
12. The rate of decision-making based on the integrated knowledge system (e.g. retrieved and accumulated information).

#### **D) 'Sustainability of Natural Resources' Outcome Solutions**

***Aim:*** The aim of 'Sustainability of Natural Resources' outcome solution is to find an effective apparatus to improve the outcome of a problem-solving in issues related to: the conservation, rationalization and sound management of natural resources, especially energy sources, guaranteeing high-quality of life and achieving sustainable natural resources for future generations with high responsibility through integrated economic, social and environmental practices.

**Areas:** Marine wealth, limited resources, alternative energies, non-renewable energy, renewable energy, rationalization of consumption.

**Objectives:**

The objectives of Sustaining Natural Resources (SNR) are:

1. Give maximum importance to natural resources.
2. Preserve the limited resources remaining or depleted.
3. Spreading the culture of saving and not waste, in public behaviour, to become a character of the national culture.

**Summary of 'Sustaining of Natural Resources' Indicators targeted during Solutions**

1. Spread of low emissions practices.
2. Reduction of average per capita consumption / energy sector.
3. Percentage of energy used in the means of mobility.
4. Rate of maintaining the average per capita share of marine wealth.
5. Percentage of what is provided of alternative energy compared to what is dependent on natural production.
6. Making use of international support mechanisms in alternative energy.
7. Percentage of environmental violations observed.
8. Rate of increasing the optimal use of new land and the amount of land currently used.
9. Average per capita consumption in water sector.
10. Percentage of increase in non-oil revenues compared to oil revenues.

## Appendix (2) Examples of Socio-Economic Problem-solving Labs

The following list of Table (A-2-1) Socio-Economic Problems Solved in different industries, communities, countries and for different situations. The demographics of the people involved, the times and the depth of the projects for some of the cases are discussed in this book, besides other books for the author in relevant to Inspiration, Youth and Resilience Economies. Most socio-economic solutions have detailed stories behind them. However, the list in Table (A-2-1) can help the reader visualise how socio-economic problem-solving can enter or influence any field and in different settings.

Many of these projects done in countries as Bahrain, Bosnia & Herzegovina, Slovenia, Morocco and recently in India.

Table (A-2-1) List of Socio-Economic Problem-solving Labs carried by the Author

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
1. Education	1-Inspiring MOE to see the intrinsic powers of Discovering the type of inspired students that can be even better than gifted, competitive and innovative students. 2-Developing creative thinking programs. 3-Discovering Inspiring Students in the right time during their 12 years in education. (Early inspiration discovery program). 4-Establishing track of the inspired students after graduation (Inspiration Pathways).

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>5-Establishing Inspiration Curriculum and program for its way of delivery through (extra-curricular programs).</p> <p>6-Establishing Building Inspiration resources</p> <p>7-Seeing the track of the inspired after graduation.</p> <p>8-Establishing early inspiration discovery program.</p> <p>10-Building Inspiration resources within School and after School.</p> <p>11-Setting Inspired Student Tracking Pathways.</p> <p>12-Establishing Future Boundary-less Schools</p>
2. High Education	<p>1-Build a knowledge economy driven practices, including implementation of Lifelong learning skills programs</p> <p>2-Improve the academic counselling that enhance the students' graduation time and give proper guidance in the right time.</p> <p>3-Improve the University capability to attract competitive projects and contracts through re-organising its knowledge expertise and profile.</p> <p>4-Establish better readiness for students lifelong learning skills as per type of specialty and disciplines.</p> <p>5-Enhance students' fitness or competence to meet labour market demand.</p> <p>6-Ensure students finish the requirements of the curriculum in the planned time: i.e., within four years for Bachelor programmes, and one and half years for Masters programmes.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>7-Apply Pull-thinking technique to improve academic advisory services.</p> <p>8-Apply 'smart registration practices' that enhances the students' choices and eliminate waste in opening extra sessions.</p> <p>9-Optimise Citation for the Country and University through Establishing International Journals.</p> <p>10-Improving the Return on Investment on every University Centre or College or Accreditation Program.</p> <p>11-Improve the utilization paper and the need to print in University Processes.</p> <p>12-Re-Engineer the integrity of the University Social Responsibility and Industries relation</p>
3. Social Development	<p>1-Improving the Quality of Life of the Elderly/ Geriatric Care Homes through exploring social asset of Day-Care Homes, instead of permanent residency homes.</p> <p>2-Inspiring the capacity of the productive family program to be more self-independent and attractive for more family members to join as full time employees/ owners.</p> <p>3-Building stronger family businesses that have higher Return on Capital Employed (ROCE).</p> <p>4-Enhance the return from Elderly homeware production</p> <p>5-Enhance the quality of life of the Disabled People and their Production</p> <p>6- Easing the process of home care</p> <p>7- Supporting 'Working from Home' Program</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>8- Revaluating the Capability of Social Allowance Value and Entitlement – in relevance to Quality of Life with priorities.</p> <p>9- Enhancing the products quality and competitiveness of the Retired &amp; the Disabled</p> <p>10- Improving the Quality of Micro Start Families with focus on Women and People Vulnerability.</p> <p>11-Improving Quality of Life of Families in isolated communities and tribes (enhance the productivity factors for women and families working from home), with target to reduce the impact of poverty through eco-tourism projects.</p>
4. Electricity Services	<p>1-Improving the speed at which electricity is connected (9 times) faster.</p> <p>2-Enhance energy conservation practices through re-engineering the bill scheme and design</p> <p>3-Improving ‘uptime’ of electricity supply to 97% to 99% by focusing on scheduling demand response and electricity shedding of through collaborative heavy load consumers’ programs.</p> <p>4-Minimising blackouts or electricity interruptions during hot summers in countries where temperature reach (above 45C) by enhancing sub-stations maintenance programs in collaboration with contractors.</p> <p>5-Applying more discount for less consumption consumers, or the less polluters, instead of charging more for more consumption consumers only.</p>



<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>6-Closing the bad debt from the consumers through new attractive payments deals.</p> <p>7-Collection of utility bills, succeeding in reducing the unpaid government and non-government bills by more than 50% in only three years.</p>
5. Water Services	<p>1-Minimising water loss by inspiring the ability to discover the early leakages by the process of observation</p> <p>2-Enhance the forecasting &amp; intelligence of Detecting Hidden Water Leakage.</p> <p>3-Re-engineering 'Water Network System' Intensive Maintenance Programs and linking it innovation in water pipes development.</p> <p>4-More effective categorisation of consumers for 'water loss detection' and collaboration program.</p>
6. Primary Care	<p>1-Early detection of Non Communicable Diseases (NCD's), i.e. Diabetes, Blood Pressure, Cholesterol and Obesity.</p> <p>2-Enhancement of Quality through Inspiring Families Physicians.</p> <p>-Enhancing Triage to patients' priority system in all health centres.</p> <p>4-Early detection of Psycho-Semantic in relevance to Anxiety in Health Centre.</p> <p>5-Appointment system for Healthcare.</p> <p>6-Increase the Health centres readiness for Emergency Cases.</p> <p>7-Optimising the role of Social Workers and Health Educational Specialist and Health visitors in family screening.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>8-Enhancing patients time spent with physicians as per NCDs Risk Matrix.</p> <p>9-Stream-mapping healthy practices in Educational Institutions towards 'NCD free Generations'.</p> <p>10-Developing Ideal Family Profile Competition between Health Centres.</p> <p>11-More Effective Elderly Care Home Visits and management of pre-admission and post-discharge</p>
<p>7. Secondary Care (Hospitals)</p>	<p>1- Improving the total throughput in Accident &amp; Emergency and speed of admissions through focusing on bed turnover ratio in most congested Hospital Wards (as medical wards) and setting discharge and priority for beds based on Urgency of the cases.</p> <p>2-Enhancing the availability of the Capacity of Beds Utilisation by inspiring towards higher discharges on time and based on defined protocols &amp; follow-up services</p> <p>3-Reduce Antibiotics use in main referral hospital</p> <p>4-Emphasising Peers Review Practice for Complex Cases</p> <p>5-Finding alternatives for Geriatric Admissions or Geriatric Services within the Hospitals</p> <p>6-Reducing Radiation to Non-Radiology Medical Staff and patients.</p> <p>7-Improving essential drugs availability in the main pharmacy, year round.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
8. Public Health	1-Inspiration in establishing 'Intelligent Inspection' that minimize the rate of poisonous calls or low hygiene fines by 90% with less manpower resources & trust worthiness enhancement. 2-Enhancement of reputation of fast food services that supports local tourism. 3-Intelligent inspection based on pull thinking and lean management that enhanced the outcome of hospitality services and with minimal resources.
9. Health Enrichment	Enhancement of 'Quality of Life' practices & style in coordination with Health Centres
10. Psychiatric Services	1-Inspiration of capacity to manage the anxiety to avoid reaching the level of chronic anxiety 2-Reduce the need to treat anxiety with medicines. 3-Reduce suicide ratio due to early treatment of main causalities among youth. 4-Reduce the patients sick leave due to self-assessments of psycho-semantic symptoms
11. Applied Science Colleges	1-Inspiring students to enhance their scientific and research contribution towards innovation index by more focused projects 2-Use the power of peer to peer influence to improve non-performing students
12. Industry Sector	1-Speed of throughput of Environmental friendly industrial projects that less dependent on depleting resources. 2-Enhancement of Investment utilization in the Industrial area through re-design of space utilization.

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>3- Development of Industrial development main strategic map</p> <p>4- Enhancing the niche of Specific types of Regional Logistics Gaps as main source of the economy in Bahrain.</p> <p>5-Free zone areas helped in focusing on space utilisation and improvement of Return on Capital Employed.</p>
13. Commercial Sector	<p>1-Enhancement of CR registration through inspiring the reality of 'one stop shop'.</p> <p>2- Improving the contribution of Microstate and Small Enterprises towards more profitability and enhancing its actual contribution to Bahraini Labour Market.</p> <p>3-Improving the speed and availability of fine stones and pearls test certificates</p> <p>4-Improving the cash flow status of Family Enterprises and reducing bad debts</p> <p>5-Improving the smooth transition of businesses from 2<sup>nd</sup> to 3<sup>rd</sup> generations.</p> <p>6-Building Independent Business Models</p> <p>7-Ensuring 2<sup>nd</sup> generation appreciates the importance of family business governance</p> <p>8-Raising the capacity, the differentiation of the 2<sup>nd</sup> generation</p> <p>9-Setting the smooth transition mechanisms within the families generations.</p>
14. Training & Development	Transformation of training to make it more focused on knowledge management than knowledge building only in the areas of ICT and Hospitality as a model
15. Pension Fund	Inspiring investment towards enhancement Local Market Stability

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
16. Quality Assurance in Education	1-Ensuring that all students in under-performing school meets the minimal standard. 2-Ensure that QA system create job creators not job seekers
17. Labour Fund	1-Ensuring that all funded projects had made a success story through the domino's effect of Labour Funds. 2-Ensure measurement of success stories in relevance to Labour fund projects 3-Ensuring the developing capacity in the survival of start-ups of more than 3 years in average and development of safe exits to youth projects. 4-Minimise enterprises' dependency on government aid funds. 5-Divert more mentorship on 'Necessity Entrepreneurship' and improve the solutions they bring to the community.
18. Woman Council	1-Setup a comprehensive outcome and legacy driven national plan that change the way woman are empowered in Bahrain through giving her more accountability to create social cohesion, stability and national competitiveness. 2-Closing the gap and accelerating the transformation towards 'Women Development' instead of 'Women Empowerment' after 5 years from the National Plan Kick-off.

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>3-Ensure knowledge sharing between Business Women, Women Entrepreneurs and Women of Productive Families Programs and specially those of the same or relevant business and link it to gamification rating. (i.e. Rating of Entrepreneurs who contribute and share knowledge)</p>
<p>19. Municipality Services</p>	<p>1-Building a comprehensive model that prove local community are ready for effectively segregating and recycling of waste.</p> <p>2-Showing the role of Municipality in 'Lifelong learning' and 'Qualities of Life' programs through inspiring projects that bridge between (Schools, Families, Local Super Markets, NGO's).</p> <p>3-Enhancing proactive practices of private companies and NGO's toward Social Responsibility.</p> <p>4-Speeding up different Municipalities Permits and reducing need for pre-inspection to 80%.</p>
<p>20. Research &amp; Development</p>	<p>1-Establishment of Knowledge Asset register in organization</p> <p>2- Enhancement of University or the R&amp;D centre to deliver multi-disciplined projects</p> <p>3- Enhancement of Project Closure to ensure the learning &amp; enhancement of projects delivery stays within the organization</p> <p>4-Study the integration between the contracted projects and published papers.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
21. University	Ensuring Lifelong Learners Students through inspiring way of flipped class teaching and ensuring suitable preparedness for coming life challenges.
22. Labour Market	<p>1-Shifting Unemployment through inspiring the stratification of Human Capital data and building models in specific industries as per countries sustainable socio-economy needs</p> <p>2-Minimising unemployment rate through effective counselling</p> <p>3-Raising opportunities of employment through sourcing type of job opportunities, especially in less demanding jobs</p> <p>4-Improving locals' employment and demand in areas of hospitality, engineering and nursing</p> <p>5-Minimise the gap between locals and expat in the main jobs of market demand by defining areas that the national labour should compete.</p>
23. Minimising Traffic Accidents	<p>Inspiring traffic accidents reduction efforts through:</p> <p>1-Enhancing the design towards worst cases not best cases</p> <p>2-Improve the speed of repair and active learning on the black spots areas.</p>
24. Sewage Sanitary System	<p>1-Enhancing sewage - drainage system designs</p> <p>2- Minimise repeated blockages in the sanitary system causes by is station pumps designs.</p> <p>3-Align the excavation work with water and electricity authority</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>4-Evaluating Contractors on their performance in managing to build and maintain pumps without blockages.</p> <p>5-Improve consumers' habits and practices in dealing with sewage system and what goes into the drainage system vs. what goes on waste separators.</p> <p>6-Preventing solid waste or debris from going into the sewage system. ☺</p> <p>7-Setting transparent program than enhances the awareness about sewage water system utilization.</p>
25. Social Insurance	<p>1-Creating a selective thinking in way of investment of pension fund that would enhance the productivity of the national economy</p> <p>2-Inspiring the social responsibility plans to ensure that selective type of lower pension jobs are more prepared for entrepreneurship after retirement.</p>
26. Municipalities and Urban Development	<p>1-Redesigning the public buildings for schools, hospitals to create more multi-purpose buildings owned by the Government and measured for its rate of occupancy and utilization.</p> <p>2-Enhance recycling culture and practices, besides prove its financial benefits for decision makers, without increasing resources.</p> <p>3-Improve Building maintenance facilities in early stages of government owned building designs</p>



<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
27. National Centre for Exhibitions & Conferences	1-Improve the occupancy rate of national exhibition centre through diversification management 2-Create Space Valuation based on type and value of exhibitions.
28. Roads Works	1-Reduce fatal traffic accidents by inspiring learning from black spots areas of accidents 2-Improve the flow between 2 points in new highways projects 3-Redesigning way of managing signs during nights and road construction or modification work. 4-Improving the capacity of traffic accident teams to evaluate the sources of accidents from the vehicle, the road and the driver to put effective preventive plan
29. Tender Board	1-Diverting more tenders to the benefit of local SMEs 2-Reducing amount paper/ paperless work needed for tender approval. 3-Setting performance standard for the role of tender board in the cycle of the economy.
30. Housing Services	1-Reduce the gap between citizens' demands and their quality of life needs 2-Improving the choices and variety of options in non-villa packages (i.e. flats) 3-Reduce the negative social inequality and improve social coexistence through post-housing services
31. Foreign Affairs	1-Ensuring the economic role of Embassies 2-Enhancement of Knowledge Sharing among Ambassadors & Embassy Staff

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>3-Enhance the status of Ambassadors after circulation</p> <p>4-Improve Bilateral Agreements Implementation &amp; ROI</p> <p>5-Improve reporting system evaluation and review of lost opportunities</p>
32. Police Services	<p>1-Reduction of drugs trafficking through refinement and codification of smuggling through reclassification of information.</p> <p>2-Ease of flow from main points of entry at both airport and ports without increase in resources or negligence of safety and security + Improving airport immigration officers' services (restore competitiveness spirit).</p> <p>3-Reduction of gold and jewellery theft from gold market shops</p> <p>4-Enhance social harmony between neighbours due to parking or similar small issues</p> <p>5-Reduction courts and legal cases transferred due to family and marriage disagreements by solving it at first instance in the police station.</p> <p>6-Improving the outcome of creating "Self-Dependent" youth in the 'Police Youth Summer Camps' which is held for 3 weeks.</p> <p>7-Reducing police turnover ratio in leaving specific critical units as guarding or working for jail rehabilitation units due to difficult and psychologically stress jobs.</p> <p>8-Enhancing maintenance of Police Experts through effective 'Experts Appreciation Program' that integrates with Projects Closures.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	<p>9-Enhancing Community-based Prevention Policing through improved screening and security assessment (in police stations).</p> <p>10-Strengthening the social role of the police (the relationship between police stations and community centres).</p> <p>11-Raising learning and knowledge management in (Economic Crimes).</p> <p>12-Increasing the efficiency of the performance of senior leaders through prioritization of incoming mail (in Criminal Investigation).</p> <p>13- Increase the efficiency of patrols (abandoned houses)</p> <p>14- Raising efficiency and readiness (cadres guard)</p> <p>15-Enhancing community prevention through improved screening and security assessment (theft of gold shops).</p> <p>16-Reducing the criminal risk resulting from unregularly employed expats.</p> <p>17-Enhancing social security by promoting prevention in the social tranquillity.</p> <p>18-Raise confidence through enhanced quality (traffic service).</p> <p>19-Improve the follow-up service of the communication with the stakeholder in police stations.</p> <p>20-Raising Safety Readiness and Evacuation of residential and commercial buildings (Civil Defence).</p> <p>21-Raising efficiency in gathering inferences in the security centres in order to reduce court rejection or persecutor returning the cases due in sufficient evidence.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
33. Ports & Marine Services	1-Improving handling of cargo and speed from docking till customer items delivery 2-Ensure Knowledge sharing of Marine Accidents and Incidents to enhance “Accident Free” even among marine fishing and sailing amateurs.
34. Land ownership & registration	1-High availability of land surveying and registration 2-Create Value Streams that create more trust of selective investors that would create jobs on their projects 3-Ease of Selling and Buying services through government authentication offices
35. Humanitarian Services Agency (NGO's)	1-Reversing the model of poverty support, by making poverty as a temporary condition that we need to prepare the beneficiaries to beyond this stage. 2-Diverting the type of services to be more for sustained income, instead of non-sustainable support 3-Mapping partnership collaboration services (Academic, youth, NGO's, Government, etc.) -Building Cost and Profit centre
36. Woman Village NGO	1-Enhance the Return on Capital Employed for the villagers during the chain of making to delivery and distribution 2-Enhance young girls' involvement in Woman village activities to ensure the sustenance of knowledge transfer.

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
37. Socio-Economic Role of School Dormitory	1-Showing the benefit and the differentiation of the 'Non-Performing Students' towards the Society and the Socio-Economy. 2-Establishing Students micro start companies 3-Establishing model for dealing non-performing students 4-Showing the self-independence of Religious Studies schools and students (by developing more profit rather than cost centre).
38. Women Entrepreneurship NGO	1-Analysing the impact of programs on 'woman development', not only 'women-empower', and the 'living standards' that comes with the 'Quality of Life' in the NGO area and scope of delivery. 2-Optimising the inter-disciplinary learning approach. 3-Enhancing the 'learning by doing' practices 4-Measure the differentiation of women on the economy.
39. Village Milk Factory	1-Enhancing the milk distribution system 2-Developing the cheese packaging scheme & integrating with hospitality and tourism needs
40. Pickle Farming & Distribution	1-Enhancing the pickles Return on Investment and profit margin 2-Setting the type of transformation from distribution to start micro packaging of high-end product

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
41. Barbarian farmers Village	1-Improving the quality of life of families in the Amazigh Villages through eco-tourism and small family businesses that support such cluster 2-Build youth independence program that counter the poverty through raising the capacity of the farmers for competitive packaging and distribution. 3-Build youth trust in the village system as a source of income
42. Radio & TV – Bahrain & Bosnia	1-Build focused positive psychology waves of initiatives that raise the aspiration of the society and trust of the future of the socio-economy of the country 2-Setting inspiration & youth economy focused strategic programs that integrate all the concerned parties towards action
43. Horsing Care	1-Prepare the jockeys for early retirement where they can be trainers or experts or administrators 2-Reduce horses causes of injury 3-Enhance the throughput of horse injury intervention 4-Enhance the quality of life of horse caring
44. Camel Care	1-Enhance the communication model between the Camel Owner, Care Rider, Camel Trainer and Camel Veterans. And nursery team. 2-Set a knowledge management program between the Four main specialties in and around Camel Care.

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
<p>45. Societal Change Programs (Una Sana Cantoon- Bihac-Bosnia)</p>	<p>1-Mitigation of Migration amongst Bosnian Youth  2-Optimise the Youth Quality Life through Students Pull thinking targeted programs  3-Building a poverty blockage and prevention program  4-Addressing the Gambling (pitting) behaviour amongst youth and building prevention scheme through schools' model  5-Building Youth Entrepreneurship &amp; Innovation programs  6-Enhancing Youth contribution in voluntary work through rectifying and supporting change in Yadnesto Football Club in Bihac.  7-Bridging the gap between academic Social Work and Social Studies Schools and the realised community problems. (Building Life Long Learning Programs that shape the Community)  8-Improving disserted women shelters returns.  9-Improving children without known parents' programs  10-Enhancing Red-Cross Programs Impact in the positive psychology of the community  11-Improving Pre-School influence programs on Children of Homeless and Beggars' families.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
46. Water Treatment Spa and Physiotherapy Centre - Bosnia	1-Specifying the qualities of the water rather than treating with water without scientific claim or evidence 2-Re-establishing length of stay 3-Enhancing marketing for differentiate high-end mineral that differentiate this natural water uniqueness compared to popular competitors. 4-Establishing accelerator incubator for hospitality tourism in the area in collaboration between University, Chamber of Commerce and SME's.
47. Organic Farming Tourism- Morocco	Selective Areas of Organic Farming is turned around with eco-tourism to enhance their profit margin and quality of life while supporting family continuity and encouragement of Moroccan Youth into the business.
48. Inspiration Economy Teaching Program in Higher Education	1-Implementation of Inspiration Economy Diploma Program 2-Illustration by Doing Multi-disciplinary teaching in classes 3-Illustration of how inspiration economy changes the way Course intended learning outcome and the program intended learning outcome through techniques as changing the enablers (i.e. the way teaching is delivered in flip class approach where students teach and the teacher facilitates) 4-Establish outcomes that are measured by 'open book exam' and by effective projects that enhance the students persistent in creating positive change in the area studies.



<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
49. Graduating and Unemployed Graduate Students Mindset Management	1-Understanding Dynamics of Labour Market 2-Setting life purposefulness Mindset 3-Challenging transformation towards self- independence and 'Big Picture' Legacy Model 4- Enhancing Employer engagement with schools, colleges and universities and improve the feedback Students interaction and readiness to challenges of the local economy.
50. Inter-Generations Gap	1-Creating Discussion Group between the different last three generations that identifies: the respected difference, the gaps and positivity of intergeneration gap. 2-Setting projects for mitigation of the gaps
51. Management of NGO's role in creating better Socio-Economies	1-Creating Discussion Group between the different last three generations that identifies: the respected difference, the gaps and positivity of intergeneration gap. 2-Setting projects for mitigation of the gaps
52. Camel Wool Carpet Factory with a Social Capital & High Community Goodwill- Nouakchott- Mauritania	1- Reverse-Design for Camel Wool Factory- Production from the Factory to Production to the Factory 2-Re-Distribute Manual Wool Carpet Machines from Factory focused to Villages & Production Families Focused. 3- Re-establish Organic Handmade Carpet Marketing Program

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
53. Ministry of Labour	<p>1-Re-Engineering Counselling Services to start from High School and be Flexible towards Job Creators than just Job Seekers.</p> <p>2-Ensuring alternative plans for graduating specialties with constraint opportunities</p> <p>3-Starting Companies for Unique Jobs as Nursing, Social Workers, Hospitality Services.</p> <p>4-Nationalising Jobs that represent country heritage and support tourism</p> <p>5-Exploring the possibility of creating Human Capital Bank that would transform 30% of the Job Seeker towards job creation; over a planned career path.</p> <p>6-Closing the Gender Gap in Unemployment, by re-inventing new productivity jobs for Graduating Women.</p>
54. Improving the Collection of Muslim Taxation (Zakat)	<p>1-Representation of the essence of Zakat as a collaborative economy club on the rich and middle-class citizens.</p> <p>2- Producing an increased image portfolio (i.e. in areas of cost vs. quality) of the outcome of the projects that the zakat and how carefully it deployed to the needy</p>
55. Fisheries	<p>1-Improve return on Investment (ROI) in fisheries and the resilience in marine food industry</p> <p>2-Bring in local market of traditional fisher-men to sustain</p> <p>3-Reduce unorganised land reclamations that have negative influence on the quality of life for the next three generations.</p> <p>4-Improve the quality of sea food on the table of middle-class family.</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
56. Agriculture and Farming	<p>1-Re-design Bahraini farmers' produce through establishing what is called "National Farmers' Day"</p> <p>2-Improve the distribution chain of local salad by attracting consumers to purchase local vegetables and fruits, and arranging deals between hospitality suppliers and local formers.</p> <p>3-Increase Palm Trees implantation by government, private and the public.</p> <p>4-Increase Palm tries protections, care, production and by product industry develop</p> <p>5-Improve the level of Gardening Competitions</p>
57. Environ-mental Services	<p>1-Emphasis polluter pays even on governmental entities</p> <p>2-Establish leading by example government working environment</p> <p>3-Gain pure water from Re-Ducting Air Handling Units in Large government enterprises as University, Hospitals and Airports.</p> <p>4-Re-engineering the National Damping Yard to prepare for effective recycling, less pollution and prevent diseases in nearby housing areas.</p> <p>5-Enhance management of Medical Waste and Dangerous Materials &amp; Chemical Recycling</p>

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
58. Islamic Waqef (Muslim way of Endowment)	1-Re-evaluating the Current Assets of Endowments and how they are professionally managed 2-Establishing 'Sharing Economy' innovative practices and solutions to open more Returns on Capital Employed. 3-Giving innovative solution for solving problems on disputed family lands 4-Innovating on type of Endowments to manage the technical and quality of life developments and diversify the resources in supporting the socio-economic issues of the community.
59. Bringing Low Privileged Community Children to Formal-Education by focusing on Sports	1-Integrating youth with both formal sport and traditional games 2-Evaluate possibility for continuation of formal and informal education 3-Use peer to peer education
60. 'Education on Wheels' & 'Education at Door Steps' Projects	-Target to deliver education to rural and isolated communities. -Formal and Informal Education for children in slums areas.

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
61. Improve the Quality of Life of 'Waste Pickers'	1-Improve Quality of Life of 'Waste Pickers' Families through differentiating their productivity from Municipalities coming Waste Management 2-Segregating waste bins implantation in universities, schools & hotels, residential societies 3-Processing of the collected waste in to high end products (i.e. Metals, glass, papers, and organic wastes) processed to high end products. 4-Improve the Nursery project and ensure the proper distribution channel of Nursery plants
62. Village Society – Productive Families & Eco-Tourism Program	1- Collection of small and large projects that target to create a comprehensive eco-tourism village. 2-All projects related to working from home and provision of raw materials to making gift products, fashion design are inter-related and this gives more importance to the project. 3-Target is to gradually make the village reach tourist spot with different hospitality activities specially during holidays and specific seasons
63. Green -house project in eco-tourism villages	1-The project involve many people from the village and youth to produce semi high-end products relevant to what the green house produce.

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
	2-Branding, Packaging, Labelling and Marketing of the semi high- end products of the eco-village. 3-Reduce Migration of Youth with more employments opportunities for the villagers families.
64. Clean Water management project for villages	1-Addressing the influence of clean water on the life development and as per the demographics of village 2- Install long life water purifiers in the village and ask for labour work donation for maintaining the condition of purifier.
65. Students Socio-psychology Awareness and counselling programs	1-Sponsoring project on counselling the students social workers and councillors 2-Simplify tools for measuring students safety or positive psychology or stress release 3- Not our goal to do students awareness campaign for universities, but do projects make university or school bullying, harassment, etc. 4-Tackle issues of students' depression and see its influence on the society.
66. Improve learning capacities to lifelong learning citizens on activities	1-Show influence of Disruptive Education and Multi-discipline on creating more inspiring students 2-Simulation experiments & hands-on to enhance the community innovation around the university campus.

<b>Type of Business</b>	<b>Summary of Socio-Economic Type of Inspiring Projects/Models</b>
67. Improve the return of University Courses to the Socio-Economy	1- Establish a model for Blanket as part of 'Fashion Design Course; in collaboration between the University and the under-privileged women
68. Anemia Prevention Program	1-Screening girls in villages for Anemia and link to socio-economic situation and productivity 2-Set preventive measures for future cases in the community with proper family planning. 3-Reduce the impact of individuals deficiency by addressing the proper diet plans, etc.

## **Appendix (3) Exercises to Re-Invent Our Lives through Engagement with Socio-Economic Problems**

### **Exercise 1 – Extracting Opportunities through Socio-Economic Formula**

#### **Goal of the Exercise**

Most socio-economic solutions can be visualised when we apply the proper perspective(s) to it. Certain common problem vectors are totally dependent on the legacy formula that aims to tackle the problem opportunities from the perspective of any or all of the following constructs: (*Availability*), or (*Quality*), or (*Efficiency*). These three constructs help to build the best socio-economic model solution.

#### **Requirement**

Apply the above identified constructs: (*Availability*), or (*Quality*), or (*Efficiency*) on a selected socio-economic issue. Start with this simple socio-economic challenge: a community with low youth aspiration and thus low engagement with their society issues.



## Exercise 2 – Setting Socio-Economic Programs that shift towards Empathetic Thinking

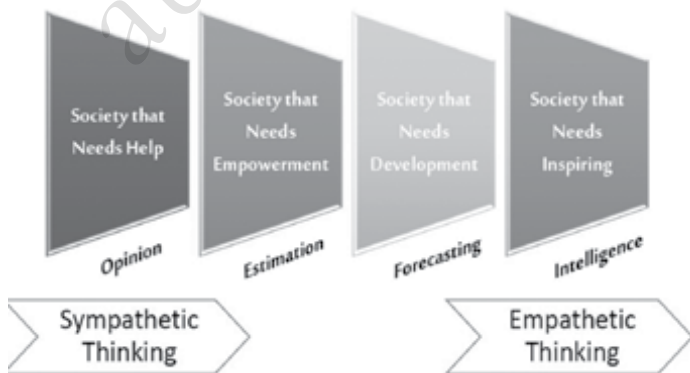
### Goal of the Exercise

Explore socio-economic projects that can help to develop the society.

### Requirement

- 1- Based on the Figure (A-2-1) that shows the society maturity status from total dependence (need help) to total independence (needs inspiring), define the Socio-Economic Program or project that can create such transformation.
- 2- List the type of socio-economic programs content that would create the maturing in shifting from sympathetic thinking to empathetic thinking.
- 3- Based on the level chosen – define the next level socio-economic program content.

Figure (A-2-1) Level of Society Development that leads to Empathetic Thinking



### Exercise 3- Capacity Assessment of the Socio-Economic Problem Wealth

#### Goal of the Exercise

Explore the capacity of the socio-economic problem through realizing its assets.

#### Requirement

Evaluate the assets that can be retrieved from the problem and can build the outcome (the story) as per Table (A-3-1).

Table (A-3-1) Evaluation of Wealth of Problem Assets

Type of Assets inside the Problem	Description of the Problem Wealth	Potential Opportunities	Plan for Outcome Story
Human Asset			
Social Asset			
Physical Asset			
Financial Asset			
Psychological Asset			

## Exercise 4- Establish Key Performance Outcomes (using Maturity Scale)

### Goal of the Exercise

To know how to establish and practice Key Performance Outcomes of the Socio-Economic Problem based on a defined maturity scale.

### Requirement

Set a maturity scale to suite the socio-economic problem similar to Figure (A-3-2). The purpose of the maturity scale is to measure the influence of the socio-economic problem.

Figure (A-3-2) Scale for Realisation of the Socio-Economic Problem

1	2	3	4	5	6	7	8	9	10
Functioning Of Programs	Focused Program on Challenges	Focused Programs on Opportunities	Positive Programs with Keywords	Success Stories	Capitalising on Success Stories	Programs with measured +ve Impact	Program with 20% increase of followers every Quarter	Profit – Self Sustained Programs with great influence	V. Competitive Brand & Identity *Highly Interdependent "

## Exercise 5- Establishing Clear Problem Statement

### Introduction

In order to come up with final *socio-economic problem statement*, we need to include specific details as observing the '*scope of the problem*' and then '*identifying boundaries of what can be reasonably solved*'. Therefore, problem statement has to be linked to the '*possible causes*' and its '*potential solutions*'. A detailed socio-economic clear and concise problem statement will provide '*clear-cut goals*' for '*focus*' and '*direction for the possible solutions*'.

**Exercise Challenge:** In order to discover the real essence of any socio-economic problem, it is highly recommended that the reader practice on the different socio-economic problems mentioned in this handbook, and particularly Table (A-2-1) in Appendix (2), where the different socio-economic labs and models were listed. Hence, please try filling the following table, i.e. Table (A-3-2) for the socio-economic problem statement that suite your needs most.

Table (A-3-2) Establishing Clear Problem Statement

<b>Socio-Economic Problem (Early Statement):</b>	
Observed ' <i>Scope of the Problem</i> '	
Identified ' <i>boundaries of what can be reasonably solved</i> '.	
' <i>Possible causes</i> ' of Problem Occurrence	
Problem ' <i>potential solutions</i> '	
Problem ' <i>clear-cut goals</i> '	

Problem ' <i>focus</i> '	
' <i>Direction for the possible solutions</i> ' of the Problem	
<b>Final 'Problem Re-statement':</b>	

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## Exercise 6- Curiosity and Level of Socio-Economic Outcomes

### Introduction

Curiosity has a major role in the way socio-economic problems are solved. Many socio-economic problems would be solved based on resources and would be considered as growth only; due to the scarcity of curiosity in the community. However, when curiosity is highly available in the spirit and the mind of the problem solvers, it is highly possible that they would come up with original outcome solutions that are not only unique, but which are self-sustained or based on collaborative models.

**Exercise Challenge:** In order to discover the importance of curiosity to any socio-economic problem, please weigh at least five random socio-economic issues in Table (A-2-1). The scale set in below Table (A-3-3). The selected socio-economic problem should score at least 9 out of 14. Only the ticks in the (yes) column should be counted.

Table (A-3-3) Level of Curiosity for Socio-Economic Problem

<b>Socio-Economic Problem:</b>		
<i>Case No.:</i>		
<b><i>Type of Curiosity Raised</i></b>	<b><i>(Yes)</i></b>	<b><i>(No)</i></b>
<i>1-Help to characterize the successive changes that are necessary</i>		
<i>2-Help to stimulate continuous learning</i>		
<i>3-Contributes to the quality of life</i>		
<i>4-Increases capital knowledge</i>		
<i>5-Create excitement and direction of behaviour</i>		
<i>6-Interact positively with new elements</i>		
<i>7-Often seek new experiences</i>		

<i>8-Help in dealing with ambiguity of the situations</i>		
<i>9-Planning more focused exploration</i>		
<i>10-Continuous realization of the stimuli</i>		
<i>11-Enhancing the overall impact by (perceptual curiosity).</i>		
<i>12-Balancing between sensory curiosity and cognitive curiosity.</i>		
<i>13-Stimulating the learner's environment (especially when it is deficient and inconsistent).</i>		
<i>14-Raising focused attempts to find the intrinsic opportunities inside the problem</i>	®	
<b>Score (out of 14 points)</b>		

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## **Appendix (4) Problem-solving Labs Accredited Programs**

*Programs provided by the (International Institute of Inspiration Economy).*

### **Introduction-**

Inspiration economy carries within it many programs that help to spread the culture of managing complex problems solving. Herewith a list of problem-solving based programs that help to change the mindset of the participants and deliver new innovation to highly needed or targeted outcome:

1. Inspiration Economy Expert- Recognition Programs
2. Complex Problem-solving Program
3. Inspiring Leaders Program
4. Future Foresight Program
5. Organisational Resilience Economy Culture
6. Organisational Youth Economy Culture
7. Curious Elastic Minds Program
8. Creative Insights Management Program
9. Organisational Intrapreneurship Program
10. Students Future Discovery Program
11. Future Change Management Experts Program
12. Opportunities vs. Risk Management Program
13. Family Business Development & Governance Program
14. Stars- Inspiring Organisations – Recognition Program



## Appendix (5) Brief on Socio-Economic Problem-solving Labs Workshop

### Introduction

This an example of one style of Socio-Economic Problem-solving Workshop carried in one-week. The participants of the workshop will learn how to use the *process of observation*, followed by *opportunities exploration* till the deployment of the proposed *socio-economic model solution*. Experience from all the lab participants would be shared and discussed where the best model solution would try to realize the following:

1. Importance of the Socio-Economic Problem to the community
2. The pattern how Socio-Economic Problem would lead to overcoming challenges and how it can be addressed.

As part of the one-week program, the lab would focus on developing the capacity of the participants in:

- 1- Methods of Observation- Absorption- Reflection
- 2- Exploring & discovering opportunities
- 3- Applying empathetic thinking in creating

There are four stages in effective Socio-Economic Problem Solution: Stage 1- Model Identification, Stage 2- Model Implementation, Stages 3&4- Model Sustenance. These stages are briefly reflected in Figure (A-5-1), (A-5-2) and (A-5-3).

Figure (A-5-1) Shows the Model Definition Stage

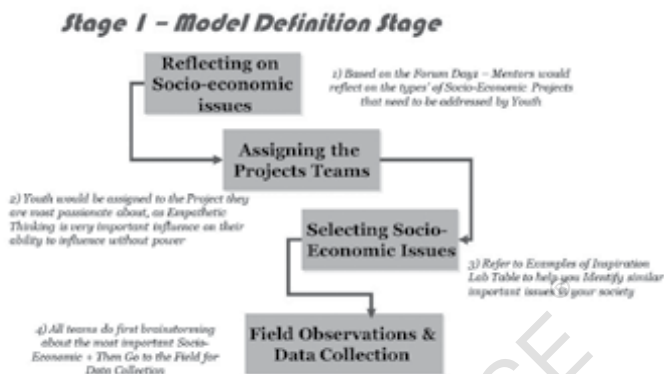


Figure (A-5-2) Shows the Model Implementation Stage

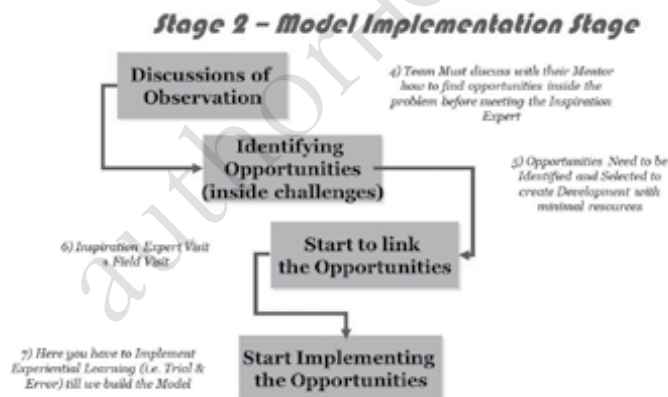
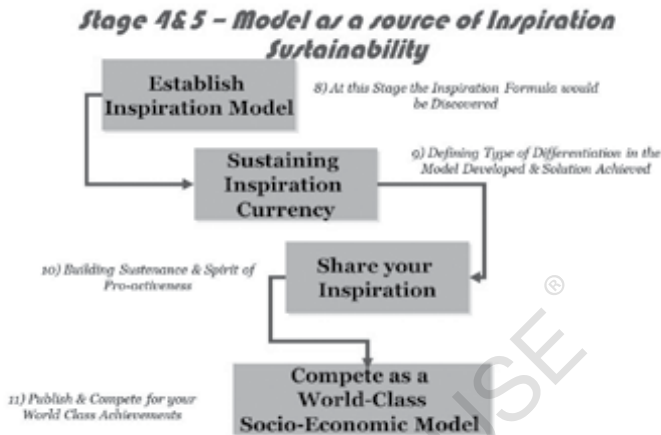


Figure (A-5-3) Shows the Model Outcome and Sustenance Stage



In the final stage the participants would lead how to turn the socio-economic model solutions to a world class reference.

### **Learning Outcomes for Problem-solving Lab Participants**

The Problem-solving Lab would target to build the following capacities:

- Analyse any socio-economic situation through different techniques, i.e. Mind-mapping, Problem Tree Analysis, etc.
- Take consideration of the different perspectives based on the opportunities exploited and the situation analysed.
- Build the model in a way that shows the ability to create a change with minimal resources and authorities.
- Visualise or forecast the socio-economic story scenario or journey.
- Develop strategies and action plan that accelerate the outcome influence.

- Articulate vision for the future of the socio-economic model proposed.
- Produce a series of sequential steps towards achieving the desired outcome.
- Have clear consideration to the barriers that would need to be overcome in order to create a socio-economic legacy.

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## **Appendix (6) Criteria for Socio-Economic Problem-solving Labs Workshop**

The total score for evaluating the competency of the socio-economic solution proposed is (10/10). There are five key success factors criteria, each score (2).

**Criteria 1-** *The problem solution come from small projects consisting of several small, accumulated and connected attempts to explore opportunities within the problem or the problem bring to the organisation or the community. In summary it creates Value-added Contribution to the Socio-Economy.*

**Criteria 2-** *The problem solution seeks to address the soul, the mind, the heart and the physical content of the socio-economic issue identified.*

**Criteria 3-** *The problem solution aim at beginning to measure the impact of the outcome proposed on the community and the problem stakeholder (through evidence using images or tangible evidence or graphic or graphic analyses summarizing the impact and level of inspiration achieved).*

**Criteria 4-** *The problem solution project maximizes the exploration of our internal capabilities and changes the level of the small models. This in turn make us feel that we can change and appreciate reality, no matter what are the circumstances and the working environment of the socio-economic issue.*

**Criteria 5-** *The problem solution would be based on less resources and at the same time inspiring others - so that it:*

*(A) Would be a source of Socio-Economic Inspiring Solution that depends on: minimizing waste due to times / costs / efficiency and enhancing the quality of socio-economic outcome.*

*(B) Have a methodology that would deliver a moral model that would influence the confidence of the stakeholders.*

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## **Appendix (7) Template of Proposed Socio-Economic Problem Solution**

In order to approve a Socio-Economic Problem Solution, usually we require a presentation that would include the following:

1. Brief about the importance of the socio-economic problem solution project (in 5 clear short points).
2. Brief about why this socio-economic problem is a source of inspiration if solved effectively?
3. What is the impact of this solution on the socio-economy?
4. What is the current situation, i.e. the cause of the problem by (numbers, pictures, or illustration)?
5. What are the hidden opportunities of the current situation?
6. What are the processes, the activities, the methodologies and the tools that can be implemented to create the model solution? (With pictures, numbers or illustration)
7. What is the model solution proposed (using numbers)?
8. What is the moral inspiration produced by the increase in the self-confidence and the ability to make influence?

## **Appendix (8) Main Stages for Socio-Economic Problem Solving – to Re-invent Our Lives**

### **1- Introduction**

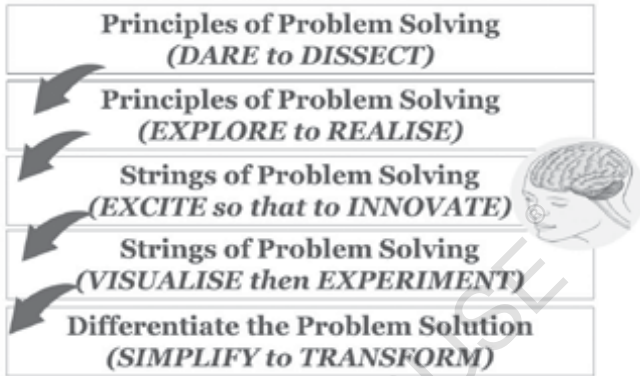
The following appendix represents the main steps for socio-economic problem solving that help us to see our intrinsic powers, our role in this life to our communities' issues and our intrinsic powers that make us capable of re-inventing our lives with minimal resources.

This handbook, as discussed in the preface and introduction, is made of three main parts. The principles, the strings and the differentiation are what make this handbook. Each part is made of stages and each of these stages has steps to be achieved, so that our lives would be re-invented and discovered.

If we take the first part of this handbook, it actually works on setting the principles of socio-economic problem solving, through five main stages that would help us to re-invent our lives and our communities. Each stage of these stages has about seven steps that help to live the stage and learn from its influence. The first of these stages (***DARE to DISSECT***) and (***EXPLORE to REALISE***). The second part of the handbook, shows the strings that would hold together the themes towards an innovative solution breakthrough through stages of (***VISUALISE then EXPERIMENT***) and (***EXCITE to INNOVATE***) so that to develop the socio-economic problem needs. The third part of the handbook, shows how to differentiate the socio-economic outcome so that to sustain its influence through the stage of (***SIMPLIFY and then TRANSFORM***). The main five stages are reflected in Figure (A-8-1).



Figure (A-8-1) Illustrates the Main Stages of Socio-economic Problem Solving Journey that would help us to Re-invent Ourselves and Our Communities.



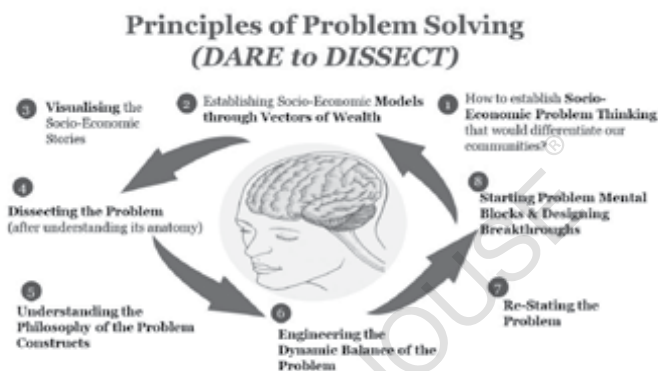
## 2- Detail of Stages and Steps for Re-Inventing Our Lives

### **Stages of Part One – Principles of Problem Solving**

Figure (A-8-2) illustrate the eight steps that make us DARE to DISSECT the socio-economic problem. While figure (A-8-2) illustrate the seven Steps that make us EXPLORE to REALISE the socio-economic problem. The DARE to DISSECT Figure (A-8-2) starts with the intent to discover how to establish the socio-economic problem thinking that would differentiate our communities? This would help us establish socio-economic models through the different ‘vectors of wealth’. These vectors of wealth would help us to start the first attempts in visualising how re-invent the socio-economic stories. Once this early visualisation is done we can start our journey to understand and dissect the problem. This would help us to understand the philosophy of the problem constructs and engineer the dynamic balance of the problem, by re-stating it. At this stage, we can put a design on

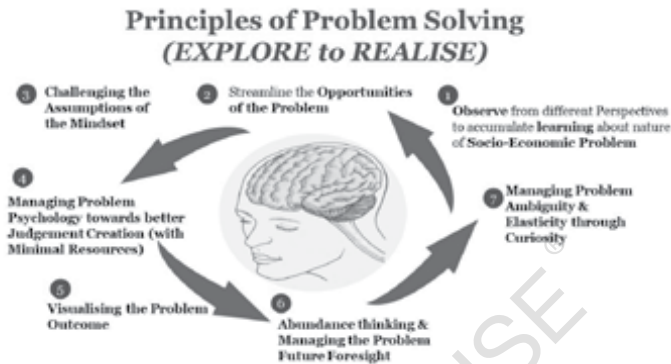
how to overcome the problems 'mental blocks' and establish its breakthroughs.

Figure (A-8-2) Illustrates Steps of DARE to DISSECT in the Socio-economic Problem Journey.



The EXPLORE to REALISE the socio-economic problem Figure (A-8-3) have seven steps that bring us closer to seeing the possibility of re-inventing our community lives. To properly explore a socio-economic problem, we need to observe it from different perspectives to accumulate the learning that would help to streamline the problem opportunities. Once we manage to streamline the problem, our mindset assumptions could be challenged towards taking effective judgements towards solutions, with minimal resources. Here, we could visualise the problem outcome more clearly. The clarity of visualisation would create our abundant thinking and help us to foresight the future of the problem. Through optimising our curiosity, we manage more the problem ambiguity along with elasticity and which would lead us to the status of 'realisation of the problem outcome'.

Figure (A-8-3) Illustrates Steps that make us EXPLORE to REALISE the socio-economic problem.



### Stages of Part Two – Strings of Problem Solving

Strings of Problem Solving are set to help us VISUALISE then EXPERIMENT the problem solution. As shown in Figure (A-8-4) the visualisation and the observation strengthens the reflective thinking. This helps to establish empathetic thinking that make us capable to apply empathetic engineering in the problem-solving journey. In order to generate more customised solutions with focused experimentation, each problem solution would be approached as per a story scenario. This would optimise our curiosity in experiential learning. Finally, modular thinking would be applied to create better cognitive load and synthesise interventions.

Figure (A-8-4) Illustrates Steps that make us VISUALISE then EXPERIMENT the socio-economic issue.

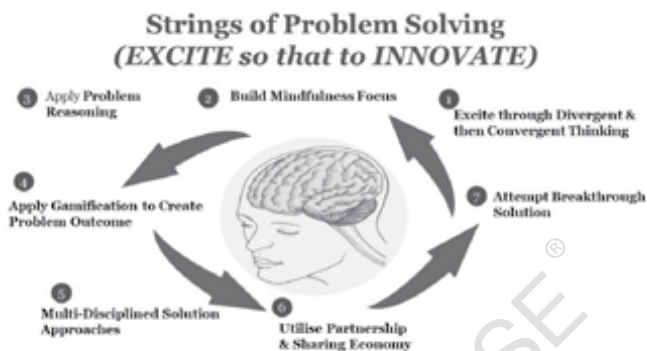
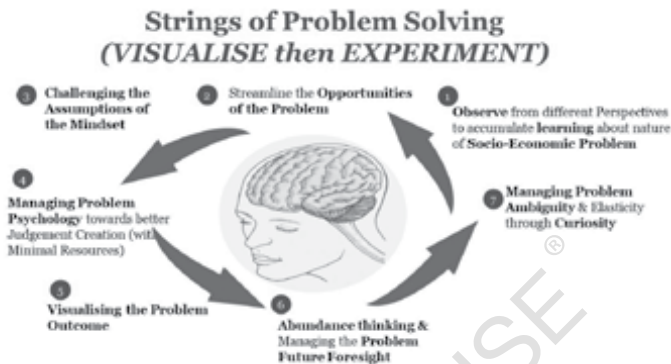


Figure (A-8-5) shows another level of problem-solving journey stages. It is about a stage that we re-invent new possibilities from a socio-economic issue. Since the INNOVATION of the socio-economic problem needs EXCITEMENT, this excitement is created through cycles of both divergent and then convergent thinking. This level of excitement builds mindfulness focus which helps us to apply 'problem reasoning'. Exciting the targeted community to be involved in innovation is highly possible if we apply 'gamification'. Gamification enhance people engagement with the challenges of the problem and create a type of competition spirit that are geared to overcome the problem main obstacles. Here we can start setting the final stages towards the problem outcome. Having a multi-disciplined solution approaches would help us to utilise different partnerships and even best practices from other human-centred economies as sharing and collaborative economy. At this stage, we can attempt a 'breakthrough-solution'.

Figure (A-8-5) Illustrates Steps that make us VISUALISE then EXPERIMENT the socio-economic issue.

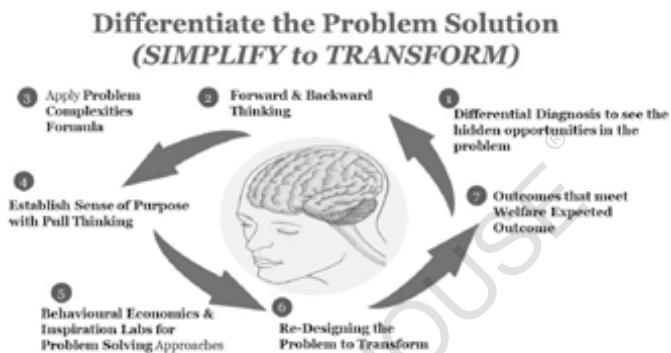


### Stages of Part Three – Differentiation of Problem Solving

Figure (A-8-6) shows now as we attempt to create the solution breakthrough through the different strings and techniques, we can still differentiate the socio-economic problem outcome through SIMPLIFYING it and then TRANSFORMING it. The differentiation of the problem might start ‘Differential Diagnosis’ which is a tool for simplifying complex problems. There are other tools also discussed in this book that would make us see the hidden opportunities in the problem such as ‘Forward and Backward Thinking’, or the ‘Complexities Formula’, or the ‘Sense of Purpose’ which can be applied with ‘Pull Thinking’ to give a radical change solution. However, one of the most effective ways today for simplifying and transforming a problem is the utilisation of Behavioural Economics (BE) and the Inspiration Labs (IL’s) which have plenty of problem-solving approaches that influence the mindset of both the individuals and the targeted community. Finally, the handbook concludes with how to re-design the problem and transform it towards an outcome

that would meet the welfare community requirement and the foresighted future.

Figure (A-8-6) Illustrates Steps to differentiate the problem through SIMPLIFYING it and then TRANSFORMING it.



## Appendix (9) Detailed Content List

### Foreword: Recognising Lives Around

<b>Socio-Economies</b> .....	xi
<b>Introduction</b> .....	xvii

### **I. Principles of Problem-solving**..... 1

#### **Ch 1- DARE** ..... 3

##### *Assessing & Reinventing Our Socio-Economic Issues* ..... 3

Socio-Economic Issues as a means for

Re-Inventing Our Lives..... 4

Types of Socio-Economic Issues..... 6

Establishing Socio-Economic Thinking to Re-  
invent Communities Lives..... 7

Socio-Economic Issues & “Problem Sensitivity” ..... 12

Managing Probabilities of Socio-Economic Issues ..... 16

Socio-Economic Problem Modelling..... 18

Power of Frustration in Socio-Economic Problems ..... 20

Cultural Diversity and Socio-Economic Problem-solving ..... 22

Socio-economic Issues & Vectors Wealth..... 23

Perspectives of Socio-Economic Issues ..... 26

Visualising the Socio-Economic Story ..... 29

Problem-solving Lab- Case ONE..... 34

Improving Community Humanitarian NGOs Impact ..... 34

#### **Ch 2 – DISSECT** ..... 45

##### *The Anatomy of Problem-solving* ..... 45

Socio-Economic Problem Anatomy &

Re-Inventing Our Lives..... 46

Dissecting the Problem by its Definition..... 49

Segmenting Ingredients of Problem-solving..... 52

The Realisation of Socio-Economic Problem..... 53

Communicating Socio-Economic Problems Solutions ..... 56

Problem Sources and Stakeholders ..... 57

Philosophy of Socio-Economic Problem Constructs ..... 59

Methods of Problem-solving ..... 62

The Dynamic Balance of Problem-solving ..... 64

Engineering of Problems and Challenges Process.....	64
Techniques to avoid Problems Roadblocks.....	67
Dealing with the Anatomy of Socio-Economic Problems .....	68
Stating and Restating the Problem.....	71
Identifying Mental Blocks.....	75
Generating Solutions.....	79
Stages in Handling Problem-solving .....	81
Breakthroughs of Problem-Finding.....	83
Breakthroughs of Solution-Finding.....	85
Problem-solving Lab- Case TWO.....	87
Shortage of Emergency Beds .....	87
<b>Ch 3 – EXPLORE</b> .....	95
<i>Practicing Socio-Economic Observation</i> .....	95
Re-Inventing Our Lives through Better Observations .....	96
Definitions of Observation.....	97
Philosophy of Observation .....	101
Observations for Complex Socio-Economic Problems .....	105
Accumulation of Observational Learning in	
Complex Socio-Economic Issues.....	106
Specifying the Types of Observations to be Gathered.....	107
Exploring Socio-Economic Opportunities from Problems.....	110
Streamlining the Opportunities in the Problem.....	112
Exploiting Opportunities from Observations.....	114
How Observations Excites the Brain?.....	118
Problem-solving and Quality of Observation.....	119
Problem Observations Bias.....	122
Visualised Socio-Economic Observations .....	125
Observing to Challenge the Usual Problem Assumptions.....	126
Multi-Discipline Problem Observations.....	130
Problem-solving Lab- Case THREE.....	132
Fisheries Re-Development.....	132
<b>Ch 4 – REALISE</b> .....	147
<i>Psychology of Problem-solving</i> .....	147
The Psychology of Re-Inventing Our Lives .....	148
Brain Physiology and the Psychology of Problem-solving .....	151
The Interaction of the Brain during the Problem-solving.....	152
The Problems Psychology and ‘Judgements’ Creation .....	156



Psychology and Socio-Economic Problem Cost .....	158
Psychology and Cognitive Process of Reflection.....	159
Dealing with Long-term Problems and Challenges Journey.....	160
Distraction as a way for Problem-solving .....	161
Problem-solving Under Uncertainty .....	162
Building Problem-solving Attitudes .....	163
Resembling State of 'Flow' for Socio-Economic 'Visualisation' .....	164
Psychology of Visualising Socio-Economic Outcome .....	167
Role of Socio-Economic Problem-solving in Productivity .....	169
Psychology of Solving Problems with Minimal Resources.....	171
Happiness and Socio-Economic Problem-solving .....	173
Understanding Thinking Styles in Problem-solving.....	175
Abundance Thinking in Problem-solving.....	183
Importance of Curiosity in Problem-solving.....	186
Future Foresight of Socio-Economic Problems Patterns.....	190
Brain Elasticity, Plasticity and Impact of Problem-solving .....	191
Managing Problem Ambiguity.....	193
Problem-solving Lab- Case FOUR.....	195
Reducing Jewellery Theft in the Souq .....	195

**II. Strings of Socio-Economic Problem-solving .....** 203

**Ch 5 – VISUALISE .....** 205

*Empathy & Reflection in Problem-solving.....* 205

Visualisation as a means to Re-Invent our Life.....	206
Reflection Behaviour of Problem-solving .....	207
Reflective Thinking and Problem-solving.....	208
Accuracy of Selection before Visualisation & Reflection.....	209
Establishing Problem Meaning .....	211
Definition of Empathy .....	212
Empathy and Problem-solving .....	213
Empathetic Engineering and Problem-solving .....	214
Mechanism of the Heart during Empathetic Problem-solving .....	216
Neuro-economics and Empathetic Problem-solving .....	219
Empathetic Engineering in Communities Problem-solving.....	221

Empathy and the Need for Customised Solutions.....	222
Building Empathy in Problem Story Scenario.....	222
Problem-solving Lab- Case FIVE.....	227
Solving Blockages of Sanitary Utility Services .....	227
<b>Ch 6 – EXPERIMENT .....</b>	<b>233</b>
<i>Curiosity &amp; Learning in Problem-solving .....</i>	<i>233</i>
Curiosity and its Role in Re-Inventing Our Lives .....	234
Social Integration and Curiosity .....	236
Curiosity and Community Problem-solving Initiatives.....	237
Solving Problems through Blind-spots .....	239
Modular Thinking and Problem-solving.....	241
Insights as a result of Problem-solving.....	246
Problem-solving and Design Thinking.....	246
Problem-solving and Organisational Learning.....	249
Experiential Learning during Problem-solving.....	249
Role of Problem-Learning in Creating Insights.....	252
Using Metaphors in Building the Problem Solution.....	253
Using Analogies in Building the Problem Solution .....	254
Differentiation of Learning in Socio-Economic Problem .....	256
Resilience Learning and Problem-solving.....	259
Cognitive Load and Opportunity	
Centred Problem-solving.....	260
Synthesis of Problems through Learning Interventions .....	263
Lessons from NASA Learning and	
Problem-solving Culture .....	265
Curiosity and the Productivity of Problem Solutions .....	267
Problem-solving Lab- Case SIX.....	271
Berber Villages Eco Tourism.....	271
<b>Ch 7 – EXCITE .....</b>	<b>275</b>
<i>Inspiration Engineering &amp; Problem-solving .....</i>	<i>275</i>
Inspiration as a Goal for Re-Inventing Our Lives .....	276
The Concept of Problem-solving Inspiration Labs.....	279
Divergent and Convergent Thinking	
and Inspiration Labs.....	281
Style of Problem-solving in Inspiration Labs.....	284
Rephrasing the Problem and Inspiration Engineering.....	285
Mindfulness Focus in Problem-solving Inspiration Labs.....	288

The Art of Problem Reasoning in Inspiration Engineering.....	290
Constraints of Problem-solving Labs.....	291
Problem Statement in Inspiration Problem-solving Labs.....	293
Problem-solving Lab- Case SEVEN.....	304
Mauritania Carpet Industry.....	304
<b>Ch 8 – INNOVATE</b> .....	309
<i>Breakthrough in Socioeconomic Solutions</i> .....	309
Breakthrough Thinking Role in Re-Inventing Our Lives.....	310
Creativity Role in Breakthroughs of Problem-solving.....	312
Complex Problems Solving for Re-Inventing Our Lives.....	315
Innovativeness of Problem-solving Process.....	318
Disruptive Problem-solving and Resilience .....	320
Socio-Economic Issues Convergent Tools .....	322
‘Blink’ as a Breakthrough Solution Methodology .....	323
Youth Innovation in Dealing with Socio-Economic Problems.....	324
Innovativeness of Problem-solving Scientific Method .....	334
Setting the Frame for Problem-solving.....	336
Gamification as a Means of Problem-solving .....	339
Storyboard and Problem-solving .....	348
Socio-Economic Resource and Problem Management .....	350
Creating Innovative Models for Socio-Economic Outcomes.....	351
Analysing Potential Breakthrough Solutions.....	353
Understanding the Benefits of Socio-Economic Problem.....	358
Setting Partnership through Understanding Problem .....	361
Role of Multi-Disciplinary Problems in Creating Breakthrough Solutions .....	362
Problem-solving Lab- Case EIGHT .....	370
Self-Sufficiency & Food Security in Middle Eastern Countries.....	370
 <b>III. Differentiation of Socio-Economic Solution</b>	
<b>Outcome</b> .....	377
<b>Ch 9 – SIMPLIFY</b> .....	379
<i>Complex Problem-solving &amp; Differential Diagnosis</i> .....	379
Re-inventing Our Lives through Dealing with Complexities.....	380

Differential Diagnosis as a Technique in	
Diagnosing Complexities .....	382
DD and the Utilisation of Reverse and	
Backward Thinking.....	384
Dealing with Problems in a DD Mindset.....	385
Preparing for the Exploration Journey.....	386
The First Exploration Journey .....	387
The Second Exploration Journey .....	388
The Third Exploration Journey.....	389
Building of Information and Problem Queries.....	390
Formula for Complex Problem-solving .....	391
Reduction of Problem Complexity.....	393
Disruptive Solutions Generated by Differential Diagnosis .....	398
Mechanics of Dealing with Differential Diagnosis .....	399
Differential Diagnosis and Pull-thinking.....	402
Problem 'Sense of Purpose' in Differential Diagnosis.....	404
Questions that lead to Differential Diagnosis.....	409
Influence of DD on Socio-Economic Problems.....	411
Problem-solving Lab- Case NINE .....	412
Reduction of Risk of Suicide through	
Anxiety Management.....	412
<b>Ch 10 – TRANSFORM.....</b>	<b>419</b>
<i>Behavioural Economics &amp; Problem-solving.....</i>	<i>419</i>
Future Role of Behavioural Economics in Re-	
Inventing Our Lives .....	420
Behavioural Economics and Problem-solving .....	421
Exploiting and Monopolising the Opportunity .....	424
Simplicity of Solutions vs. Complexity of Problems .....	425
Success Stories of Behavioural Economics in	
Dealing with Complex Problems .....	426
Utilising BE Principle in Creating Sustained	
Socio-Economic Solutions.....	433
Process of Exploring Opportunities of BE Change .....	453
Re-Designing Problem Solution in a Sharing Economy .....	459
Welfare Problem-solving and Behavioural Models.....	463
Problem-solving Lab- Case TEN .....	472
Fresh Water Leakage in Countries of Water Scarcity .....	472

<b>Final Words</b> .....	477
<b>Reference</b> .....	481
<b>Appendix</b> .....	487
Appendix (1) Socio-Economic Conditions as a Reference for Problem Solution Outcomes.....	487
Appendix (2) Examples of Socio-Economic Problem-solving Labs .....	494
Appendix (3) Exercises to Re-Invent Our Lives through Engagement with Socio-Economic Problems .....	521
Appendix (4) Problem-solving Labs Accredited Programs.....	529
Appendix (5) Brief on Socio-Economic Problem- solving Labs Workshop .....	530
Appendix (6) Criteria for Socio-Economic Problem-solving Labs Workshop .....	534
Appendix (7) Template of Proposed Socio- Economic Problem Solution.....	536
Appendix (8) Main Stages for Socio-Economic Problem Solving – to Re-invent Our Lives.....	537
Appendix (9) Detailed Content List.....	544
<b>Brief about the Author</b> .....	551

## BRIEF ABOUT THE AUTHOR



Dr. Mohamed Buheji is the founder of International Inspiration Economy Project (IIEP) which includes the International Institute of Inspirational Economy (IIIE), The Youth Economy Forums (YEF), the Int'l Journal of Inspiration & Resilience Economy, and the Int'l Journal of Youth Economy.

He is considered a leading expert in the areas of Future Foresight, Creative Thinking, Problem-solving, Excellence, Knowledge, Innovation, Inspiration, Change Management and enhancement of Competitiveness for over 25 years. Being a retired professor from University of Bahrain, he is still visiting professor for MBA programs in different countries in MENA region.

Dr Buheji has published since 2008 more than 80 peer-reviewed papers and 20 books about innovative thinking, lifelong learning, livelihood, knowledge economy, quality of life, and competitiveness. He has latest seven books in English

about Knowledge Economy, Inspiration Economy, Inspiring Government, Inspiration Engineering, Resilience Economy, Youth Economy and Socio-Economic Problem Solving. Dr Buheji got many awards for his socio-economic projects and is a Fellow of many leading institutes such as the World Academy of Productivity Science.

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