

CHAPTER-5

A BRIEF DESCRIPTION OF THE DISTRICT MORIGAON

5.1 PHYSICAL ASPECTS :

Morigaon district is situated on the South bank of the Brahmaputra river in Assam Valley. Till September 1989, Morigaon had been a sub-division of Nagaon district. It was upgraded as a district with its headquarters at Morigaon vide Notification No. GAG/CB/370/87/102 dated September, 1989. It consists of the area of the erstwhile Morigaon sub-division of the old Nagaon district.

The district has one sub-division and is comprised of five revenue circles. It has five Community Development Blocks, 632 Villages and 85 Gaon Panchayats. Morigaon district is having a geographical area of 1551.00 sq.km.

The district of Morigaon lies between 26.31'' and 26.33'' North Latitude and 91.59'' and 92.35'' East Longitudes. The district is bounded by Nagaon district on the East, the Brahmaputra river on the North, Karbi Anglong district and Meghalaya state on the South and Kamrup(M) district on the West. The topography of the district is similar to that of the adjacent districts. The district is situated on flat alluvial plan. It comprises of scattered small hills on the western part. There are many beels and marches lying scattered in the district.

The soil of the district is alluvial and mostly loamy and consists of mixture of clay and sand in varying proportions. Marshy soil is chiefly found in the low lying water logged areas . The red soils are found in the hill slops and foot hills.

The principal river is the Brahmaputra which flows along with the entire Northern. Boundary of the district. The Brahmaputra is bounded on either side by stretches of Marshy land covered with thick grassy jungles. The other important rivers of the district are Kopili , Kalong, Kiling, Sonai and Pokaria etc. During rainy seasons all the rivers get flooded with water. Floods are frequent in the district every year and cause tremendous change in the river courses and raise the river bed by depositing the debris carried from the upper reaches.

The climate of the district is similar to that of the other districts of Brahmaputra valley. The climate of the district is characterized by a highly humid atmosphere all through the year. Summer heat is relieved to a great extent by the cool breeze of the river Brahmaputra . The monsoon usually starts from the month of May and continues up to the month of August. The winter is cold and starts from the month of November and continues up to February. Generally weather is dry and moisture is less and quite pleasant from the month of the February to April. The mean maximum and minimum temperature varies from 29.9⁰C to 18.9⁰ centregrad and average annual rainfall of the district is 421.71 cm. Maximum rain occurs between June to September.

There are many beels, marches and low lying areas in the district. The water of the beels lies in the centre of the depression and they are surrounded by luxurious grass and reeds. Marshes and beels teemed with varieties of fishes and wild birds. Lake crane, pelican, king fishers etc.

There are also many hills and hillocks scatters here and there in the district. Most of the hills are covered with dense forests. The Mayong and Burhamayong hills are the biggest in the district. Mayong Hills are situated at a height of about 347 meters from the sea level. These hills are outflanked of Maghalaya hills. The

hills are composed of evergreen, semi green and deciduous varieties of woods contributing to the revenue of the state. The district is also rich in flora and fauna.

The headquarter of the district is about 75 km away from Guwahati city and is 45 km away from Nagaon town. The nearest railway station of the district from the headquarter of the district is 23 km away.

5.2 MAJOR CHARACTERISTICS OF THE DISTRICT MORIGAON:

A. FORESTRY :

Forestry occupies a significant place in the economy of the district. Considerable portion of people depends on forest for firewood to cook their food and also to construct their houses.

The district is rich in forest resources. The forests of the district are evergreen type. There are hundreds of valuable species found in the forests of the district. The forestry is mainly divided into two classes, reserves forests and unclassified state forests. Unclassified state forest are simply Government waste land. The forest area of Morigaon district includes Pobitora Wild Life Sanctuary, Sonaikuchi reserves forest, Khota Hat reserve forest and Bura Mayong reserve forest.

The Pobitora Wild Life Sanctuary is one of the important Sanctuary of the State of Assam. The total area of this Sanctuary is 38.80 sq. km. Rhinoceros, Deer, Wild buffalo, pig and other wild animals are found in the Sanctuary. Besides many valuable species are also available in the sanctuary.

The important forest wealth of the district are Koroi(Albizzia Procera), Ajhar (Lagerstroemi flos Reginac), Simul (Bobox Malabaricam), Khokan(

Duabanga Sonneratioids), Sonaru(Cassia firluta) , Gomari (Gmelina arborea), Thutmala (Garugapinnates), Kako Bamboo (Dendro calamues Hamiltori), Bhaluka Bamboo (Banbusa Falcua), Jato (Bambusa Fulda), Amoro(Amoora wallichi) and sopa(Talauma Phedocarpa).

B. MINERALS AND MINING :

No minerals of economic importance have so far been discovered in the district of Morigaon . Minor minerals like road metals, sands, brick, clay are available in the district. The clay available in the district is suitable for the manufacture of bricks and earthenware.

C. FISHERIES :

The district of Morigaon has sufficient number of natural fisheries including rivers, beels, swamps, tanks etc. In addition to these, the Fishery Department has taken various measures to develop pisciculture in the district. The district of Morigaon has 84 numbers. of beel/fisheries covering an area of 8299 hectare of land during 2011-12. The number of ponds and tanks in the districts is 4798 hectare and they cover an area of 720 hectare during the same period. The district has 163 numbers of swamps covering 1583 hectare and total number of forest fisheries is 9 and the area covered is 955 hectare.

The production of fish seed in the district during 2010-11 were 2 million. It increased rapidly to 46 million in 2011-12. The production of fish in 2010-11 were 10370 tonnes and 2011-12, it were 10990 tonnes. Fishes of major varieties which have been generally found throughout the district include Rao, Barali, Chital, Kurhi, Bahu, Nara, Kaliajara, Magur, Kawaoi, Sal, Bhakua etc.

Fishery Department had implemented two schemes namely (a) Scheme under Tribal sub-plan and (b) Scheme under scheduled caste component plan in the district for development of pisciculture in the district.

5.3 LAND UTILISATION :

Total geographical area according to professional survey in 2010-11 is 1,58,765 hectares in the district of Morigaon of which 31704 hectares of land is area under non-agricultural uses. Water logged land area in the district is 1583 hectares, social forestry area is 300 hectares, land under still water 8971 hectares and other land in the district is 17313 hectares. Barren and unculturable land in Morigaon district is 3537 hectares.

In Morigaon district the large and medium operational holders constitute only 26.3% of total holders, but they possess 56.9% of total land. Though the small and marginal landholders constitute 73.7% of total holders they have only 43.1% of total land under their possession.

A) TENANCY :

The Tenancy Act which have been enforced throughout the district are of relatively recent origin. In the past, Bengal Act of 1869 was considered sufficient to meet the requirements of all the plain districts of the Brahmaputra Valley where tenancy was known to be common. Goalpara Tenancy Act of 1929 was also enforced but this act had no application in Morigaon districts. In 1935 the government of Assam enacted Assam Tenancy Act(Temporarily settled districts) with a view to regulate the rights and liabilities of the Agricultural tenants and land lords. It seeks to confer upon certain rights over the land. As per this act, the tenants enjoyed Lakhiraj land or Khiraj lands as ryots under certain agreements

expressed or implied, on payment of rent. But this act had also been repealed and fresh act known as the Assam (Temporarily settled area) Tenancy Act of 1971(Assam Act XXIII of 1971) which seeks to confer the right of use and occupancy of land on the tenants who is in continuous occupation of land for a period of three years. This act a period of three years. This act also abolishes the rights of the tenants to sublet of their occupation.

In order to give protection to the non agricultural tenants in the urban areas, the Assam Non Agricultural Urban Areas Tenancy Act was enacted in 1955. Adequate protection has been sought to the tenants against eviction of land-lords. At the same time this Act marks it obligatory on the part of the tenants to pay fair rent to the landlords .

The Assam Urban Areas Rent control Act was also enacted in 1966. This act equated the relationship between the landlord and the tenant who is in occupation of any house on payment of rent. The Govt. of Assam has promulgated an ordinance known as Assam Urban Areas Rent Control ordinance 1971 (Assam ordinance II) regulating fair rent of house situated within the limits of urban areas in Assam. Besides fixing the fair rent and the standard rent of the house, this act seeks to provide adequate protection against ejection of the tenants from rented house. This act makes it obligatory on the part of the landlords to maintain the existing essential supplies and services of the house properly.

The Assam Adhiar Protection and Regulation Act was enacted in 1948 with a view to give protection to the adhiars who cultivates land on the basis of crop sharing with the land lords. The arbitrary eviction of the adhiars has been sought to be heeded under this Act. Adhi Concilation Board have been constituted in all Revenue Circles. Besides abolishing the intermediary landlords this Act has

regulated the rent payable by the tenants. The tenants get three-fourths to our fifths of the total crop depending upon the supply of the plough cattle by the landlords. There was also provision in this Act that from the gross crop, the seedgram would be paid to the person who contributed it.

Various Acts have been implemented in the district to bring about the land reforms in respect of conferring virtual ownership of the agricultural land on the actual cultivators and to reduce the holding of the owners of vast estates. The following are some of the important legislations implemented in the district.

B. CEILING ON AGRICULTURAL HOLDINGS :

The State Government has enacted an Act known as the Assam Fixation of ceiling on land holdings Act 1956. The main objective of this Act is to make tillers of the soil the owners of the land. According to this act no person either by himself or through member of his family shall be entitled to hold as an owner or tenant, lands which exceed the limit of one hundred and fifty bighas in aggregate. The State Government shall acquire the possession of any excess land by publishing a notice in the official gazette and all rights and interest of such persons in such excess lands shall stand transferred to the Government. In case the land is acquired Government compensation shall be paid to the owner of the land. But this act makes certain exceptions such as (a) land belonging of any religious or charitable institution of public nature, (b) land held for special cultivation of tea purposes ancillary thereto, (c) land exceeding 150 bighas utilized for large scale cultivation of citrus in a block by any persons before 1st January, 1995. This Act was amended in 1957, 1962 and in 1975.

The Assam land (Requisition and Acquisition) Act 1948 (Assam Act of 1948). This Act provides for requisition and acquiring surplus waste land of Grant

holders to provide land to the landless, flood affected or displaced persons or to co-operative societies formed for the purpose of cultivation.

5.4 AGRICULTURE:

Agriculture is the main source of livelihood of the people in Morigaon district. Abundant rains and highly humid climate of the district help to accelerate the growth of agricultural crops and various kinds of vegetables. The highest proportion of cultivable land of the district is put under paddy cultivation.

5.4.1 AREA UNDER HIGH YIELDING VARIETY OF RICE IN MORIGAON DISTRICT:

The district of Morigaon which is located in the middle part of the State of Assam on the South bank of the mighty Brahmaputra river is mainly agrarian in nature. The district produces three kinds of rice namely autumn, winter and summer rice. The area under autumn rice in the district is 1265 hectares which counts 2.01 percent of the total rice producing areas of the district. The area under winter rice in the district is 25885 hectares which is 41.15 percent of the total rice producing areas in the district and the area under summer rice is 35758 hectares. Summer rice occupies 56.84 percent of total rice producing areas in the district during 2011-12. Summer rice occupies the highest proportion of rice cultivable land of the district.

The average productivity of summer rice in the district of Morigaon is as high as 5300 kg per hectare in 2013-14. The total production of summer rice in the same year is 217936 metric tonnes. On the other hand, the average productivity of

winter rice in the district is only 2500 kg per hectare in 2013-14. The total production of winter rice in same year is 119065 metric tonnes.

The increasing trend of productivity of summer rice(Boro rice) in the district of Morigaon is shown in diagram 5.1.

DIAGRAM 5.1

Increasing trend of Summer (Boro) rice productivity in Morigaon district in the last five years

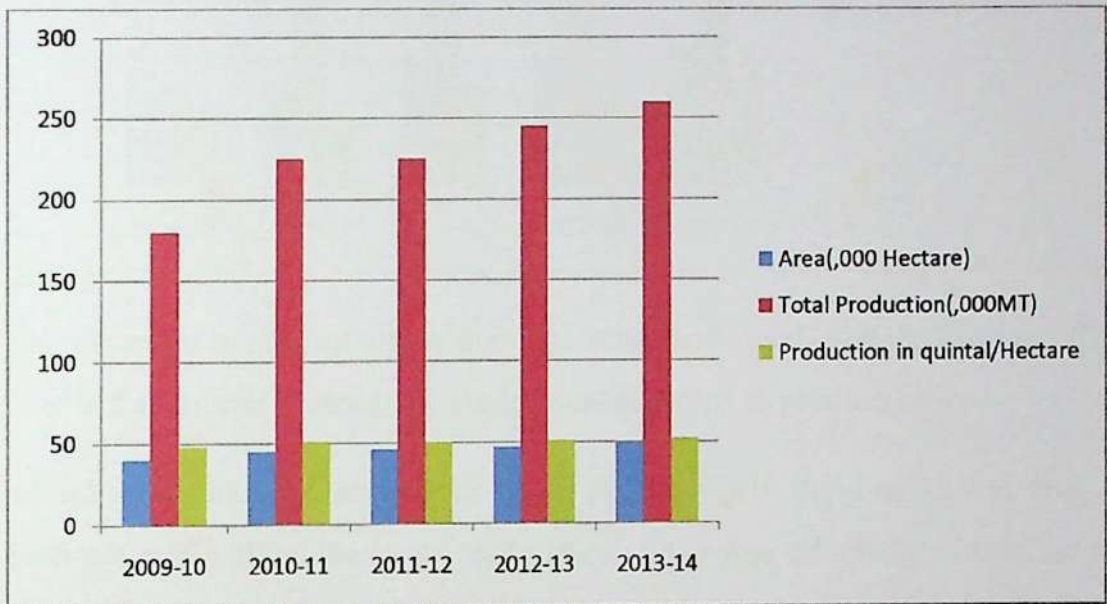
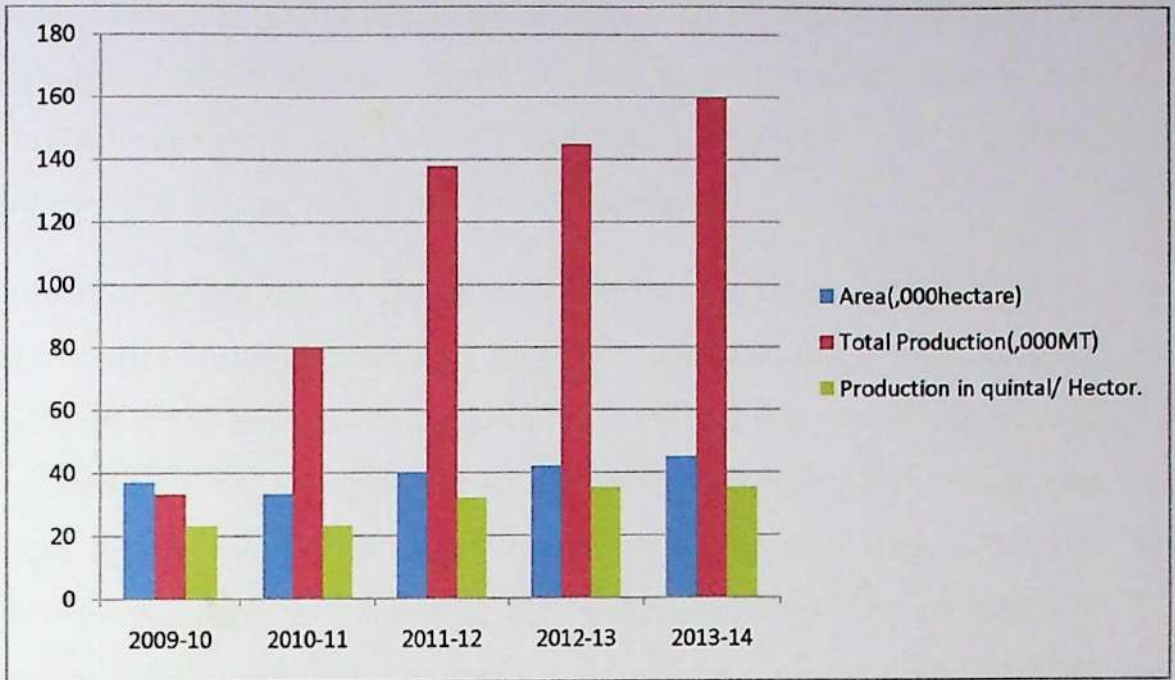


Diagram 5.2
Trend of Sali Rice in Morigaon District in the last Five Year



The variation in productivity is due to weather and flood. The agriculture of the district is the gamble of monsoon. Better weather helps to produce more.

Flood is the common occurrence in the district. Early flood as well as late flood, both adversely affect the crops. Early flood in the year adversely affects the summer rice. Whereas late flood damages the Sali paddy.

5.4.2 TEMPORAL CHANGES OF PROPORTIONATE AREA OF SUMMER RICE :

The proportionate area of summer rice in the gross cropped area is found to shift at different magnitudes in the last few years. It is also seen that the area of

summer rice grows much faster in Morigaon district. Reclamation of waste land (swamp) for summer rice cultivation and installation of Shallow Tube Wells in the medium land have contributed much towards the change of cropping pattern in the district. Farmers of the district cultivate summer as well as deep water rice as rescue crops in the chronically flood affected areas where winter rice is severely damaged by flood and late transplanting is also not feasible.

The relative position of rice in the cropping pattern at farm level in the Morigaon district is shown in table 5.1 the table 5.1 indicates that on both marginal and small farms, Sali rice is more and local variety of Sali rice occupies more area. It is followed by HYV Boro rice due to special Shallow Tube Well programme undertaken by the government, especially in the flood affected areas. Ahu rice gradually lost popularity in the district and transplanted early Ahu merged with Boro rice. Suitability and land topography with sufficient rainfall encouraged the farmers to cultivate Sali rice in the flood free areas.

TABLE-5.1

Proportionate share of area under rice in gross cropped area for different Sizes of farms in the Morigaon district.

Crops	Marginal		Small		Average	
	Area (Ha)	Share (%)	Area (Ha)	Share (%)	Area (Ha)	Share (%)
Local Sali Rice	14.86	19.38	23.27	20.61	18.40	19.90
HYV Sali Rice	1.20	13.30	19.60	17.36	14.16	15.01
Deep Water Rice	6.47	8.44	6.47	5.73	6.47	7.30
Local Boro Rice	1.47	1.91	2.33	2.06	1.83	1.97
HYV Boro Rice	7.07	9.22	15.33	13.58	10.55	11.06
Local Ahu Rice	5.50	7.33	7.14	6.32	6.21	6.60
HYV Ahu Rice	4.73	6.17	6.33	5.61	5.40	5.93
Net Cropped Area(Ha)	41.20	-	62.60	-	50.22	-
Gross cropped Area(Ha)	76.66	-	112.90	-	91.94	-
Cropping intensity (%)	186.08	-	180.35	-	183.04	-
Cropping intensity for Rice(%)	122.18	-	128.55	-	125.36	-

Traditionally, farmers were accustomed to the production of Sali rice for their staple food. The average intensity of rice cultivation is 125.36 percent with high total intensity of crops in the district. Deep water rice is cultivated in the substantial area where no other rice crops could be cultivated due to high depth of water during the rainy season.

5.4.3 CULTURAL MANAGEMENT:

The study has found that wet seed beds are always used for raising Boro rice seedlings and that the large majority of farmers raise seedlings in large, flat beds rather than narrow strip beds. It is also found that the majority of farmers applies some form of fertilizer, which are organic, inorganic or a mixture of both, in Boro nurseries. They use they want to encourage the growth of seedlings, which is very slow during the Boro Season compared with the Ahu and Sali Seasons.

The study has found that 40 percent of respondent farmers in swampy ecologies grow Boro rice without ploughing the land, 30 percent plough once and 30 percent plough two or three times. Variation in the number of ploughings is the result of differences in farmers' situations and perceptions of good practice. In contrast with this, farmers in irrigated ecologies prepared their land by ploughing it four to five times.

Seedling age is considered one of the most important management factors for higher rice yields. Compared with other rice, relatively old seedlings are used in Boro rice. The study has found that the majority of farmers in the swampy ecology used seedlings that are between 45 and 60 days old while, in irrigated ecologies, 30 to 45 days old seedlings are used for transplanting. The use of older seedlings in swampy conditions is owing to the requirement for taller seedlings and to a prolonged planting period, because farmers start planting from the upper periphery, working towards the low lying centre as the water gradually recedes. In irrigated conditions, farmers have good control over water and, therefore, can transplant their crops within a shorter time and with smaller, younger seedlings.

The number of seedlings per hill and the maintenance of optimum plain populations are also important aspects of good cultural management. The survey

has found that, irrespective of growing ecology, the majority of farmers used for to five seedlings per hill instead of the recommended two.

Regarding fertility management, the study has revealed that , in general, farmers in swampy situations did not apply fertilizer, while all the farmers in irrigated situation did it. A large majority of farmers have no idea of the optimum use of fertilizer, with the majority using a very high dose of nitrogen with no or relatively very low doses for phosphorus and potash. The farmers are also observed to differ in the method of fertilizer application: 90 percent of those swampy ecologies have resorted to only top dressing with nitrogen; in irrigated , flood prone ecologies 40 and 60 percent, respectively , applied fertilizer as basal followed by top dressing, or as top dressing or as top dressing alone ; while in irrigated , flood free ecologies , 100 percent applied fertilizer as basal followed by top dressing. The study has also found that the farmers , in general, are not aware of the benefit of incorporating applied fertilizers .

5.5 IRRIGATION IN THE DISTRICT OF MORIGAON :

A large portion of the area in Morigaon district is mainly rain-fed as the district has been blessed with heavy rainfall during kharif season. However there is need and scope to improve irrigation facility as the crop suffers from moisture stress condition during Rabi season due to uneven distribution of rainfall. About 43% of net cropped area of Morigaon district is under irrigation. Minor irrigation sources covers almost 90% of total irrigated area. The net area irrigates in the district of Morigaon in 2010-11 is 934 hectare and in 2011-12 is 874 hectare. In Kharif season 202 hectare of land is irrigated in 2010-11 and in 2011-12, 245hectare is irrigated. In Rabi season 934 hectare and 874 hectare of lands are

irrigated in 2010-11 and 2011-12 respectively in the district of Morigaon. The area irrigated by different sources in the district is shown in the table 5.2.

TABLE 5.2

Net area irrigated by different sources in Morigaon District

Sources	Area (Hectare)
Canals/Channel	1,130
Well/Tube Well	45,643
Tank/Beel	2,790
Net Irrigation area	49,563

The rain-fed area in the district is 66,011 hectare and net irrigated area is 49.563 hectare out of the total irrigated area in the district 674 hectare is irrigated by major and medium irrigation scheme, 45703 hectare by Minor scheme and 3186 hectare by other sources.

SHALLOW TUBE WELL (STW) IRRIGATION:

After the Shamridhi Krishak Yojana (SKY), a poverty alleviation programme of the Government of Assam, Shallow Tube Well irrigation is popularized in Morigaon district. There were practices of using STW irrigation by individuals in a very limited extent before launching SKY too. All the pumps are acquired by the farmers from NABARD and Assam Rural Infrastructure and Agriculture Service Project(ARIASP) through the district Agriculture Department. NABARD has the highest share of the STW distribution in the district.

ECONOMICS OF SHALLOW TUBE WELL :

The study has found improvement of economic status after improvement of economic status after the STW irrigation. However the economics is different for different farmers. Two interesting realization in the field is that the farmers are not used to do any financial evaluation of farming and when attempts were made to do so in the field, farmers categorically refuse to include the labour cost of their own. When they mention about the labour cost they mean only the hired labours that are required in different points of time.

5.6 AGRICULTURAL MARKETING:

The district of Morigaon produces surplus quantities of various agricultural communities such as paddy, jute, oilseeds, vegetables, bananas, etc. Farmers have been selling their surplus produce in the primary market at very low price. Local money lenders and middle men take the chance of poor economic conditions of the farmers. On the other hand, the markets of the district have no proper infrastructure facilities like storage, weighing, standardized etc. The most important thing is that there is no any farmers' organization in the district for protection of farmers' interest. Thus, the farmers of the sample villages have been deprived of getting remunerative price of their produce due to prevalence of defective traditional system of Agricultural marketing.

5.7 AGRICULTURAL CREDIT:

Well developed agricultural facilities play an important role in developing the agricultural sector. Due to poor socio-economic condition of the small and marginal farmers and raising cost of agricultural inputs, agricultural credit plays an important role in agricultural development. But the credit facilities in the district are not sufficient to the requirements of the farmers. Most of the farmers are either illiterate or poorly educated. They do not know the procedure of obtaining a credit from an institution like bank. They, therefore, depend on relatives, money lenders and middle men to fulfill their agricultural requirement of financial needs.

5.8 COST AND RELATIVE PROFITABILITY OF SUMMER RICE:

The economics of rice production has revealed that the rain fed local summer rice is relatively less costly to produce than autumn and winter rice on the marginal and small farms. Summer rice cultivation under irrigated conditions adopting HYV is more costly than under rain fed conditions. This escalation is mainly due to high costs of labour irrigation and chemical fertilizer in the non-traditional medium land. Labour cost in the traditional areas share about 58.05 percent of the total variable cost, while cost of seeds is 10.92 percent. There is no distinct difference in Cost-Return Ratio in both the sizes of farms for this crop under rain fed and irrigated conditions.

The cultivation of summer rice in the non-traditional area adopting HYV is costlier, but productive with higher return at higher level of technology. Under normal conditions, cultivation of HYV winter rice is found to be more remunerative than autumn and summer rice due to higher natural soil fertility and high rainfall, reducing the cost of cultivation. On the other hand, application of full dose of fertilizers is not effective in the rice field during the rainy season because of high percolation and leaching losses.

Cultivation of HYV summer rice in the non-traditional areas having irrigation incurs 81.60 percent higher cost for marginal farmers, while it is 109.37 percent higher for small farmers in comparison to its cultivation under rainfed conditions in the traditional areas. The share of irrigation cost and agrochemicals including manures and machine labour is 39.84 percent and irrigation alone accounts for 19.60 percent of the total variable cost. Increase in return is 383.00 and 214.66 percent respectively. This indicates that if summer rice replaces the area of rainfed autumn rice, there will be an yield advantage per hectare through increase in productivity. Net income is found to increase marginally in small farms due to cultivation of summer rice in the non-traditional areas. However, the magnitude of cost and return for HYV autumn and summer rice under irrigated conditions does not show much changes. Cost of irrigation in the non traditional area is often reduced if there is early rainfall in the months of February and March, affecting the average cost of production. Thus economics of cultivation of this crop also depends on monsoon. The economics of rice production is shown in table 5.3.

TABLE 5.3
Economics of Rice Production in Morigaon District of Assam

Situations	Cost -A ₂ (Rs/ha)	Total cost of cultivation at cost-C (Rs/ha)	Net income at cost-C (Rs/ha)	Percentage share of net farm income	Cost of production at cost-A ₂ (Rs/q)	Cost of production at cost -C (Rs/q)	Net income (Rs/q)	Cost return ratio
A. Marginal farmers								
1. Rainfed Local								
Autumn	5357	11170	-218	-0.02	290	605	-25	0.98
Winter	5044	12177	1814	3.82	210	508	76	1.15
Summer	5408	14736	5300	1.10	157	427	154	1.36
Deep-water rice	4416	11425	3813	7.15	163	421	140	1.33
2. Rainfed HYV								
Autumn	6391	15135	3163	1.94	201	476	98	1.21
Winter	5624	14813	4761	6.00	164	432	138	1.32
3. Irrigated HYV								
Autumn	8067	19737	7208	0.04	169	414	151	1.36
Winter	6978	17994	7785	1.49	153	397	170	1.43
Summer	9728	23162	8136	8.16	179	427	148	1.35
B. Small farmers								
1. Rainfed Local								
Autumn	4686	11669	388	0.03	253	569	19	1.10
Winter	5023	12327	1911	5.37	207	509	79	1.16
Summer	5023	14194	5416	1.52	149	422	162	1.38
Deep-water rice	4550	11431	3487	2.72	172	433	132	1.31
2. Rainfed HYV								
Autumn	5702	14440	4538	2.26	171	439	135	1.31
Winter	5238	14785	5826	11.82	147	410	161	1.39
3. Irrigated HYV								
Autumn	8112	19419	7266	1.93	169	414	152	1.36
Winter	6534	17067	8193	2.28	141	382	183	1.48
Summer	9811	23610	8717	16.14	174	420	154	1.37

The relative economic status indicates that contribution of winter rice in net income in the district is predominating, following summer rice in both the groups of farmers is the lowest, Higher contribution if summer rice indicates that the area under autumn rice is shifted to summer rice at farm level, contributing to higher farm income. This is much encouraged by the higher net income of irrigated HYV summer rice in the district. The crop is physiologically advantageous due to high photo-period, leading to higher productivity. However, high capital requirement to achieve higher productivity of this crop in the non-traditional areas with market distortions may limit the area expansion in the marginal and small farms. It has also been reported that high level of chemical fertilizers used continuously in the field has reduced the natural fertility of soil in the non-traditional areas and it needs added level of fertilizers to achieve the constant level of yield, leading to capital constraints on marginal and small farms. The crop may also be risky in summer if early rainfall is accompanied by hail storms. The other weakness is that the crop has a long gestation period of about six months and is prone to early flood and hail storm because of photo sensitiveness of the varieties available for cultivation at the present. The cooking quality of the traditional varieties is not preferred by the consumers of high-income group due to its coarseness. The cooking quality of the HYVs cultivated as summer rice is quite fair. The grains of summer rice also fetch lower prices in the market than those of winter rice. The growth of seedlings of summer rice is checked in the seedbed as well as in the field after transplanting, as temperature drops in winter. This affects the utilization of land more intensively. The farmers utilize the swamp areas only once by cultivating summer rice under rain fed conditions with other aqua harvests like fish, wild grasses, while the medium land can be used intensively during the year through multiple crop cultivation.