

CHAPTER – 6

BORO PADDY CULTIVATION IN MAYANG IN THE DISTRICT OF MORIGAON

6.1. MAJOR CHARACTERISTICS OF MAYANG DEVELOPMENT BLOCK:

Mayang “the Land of Tantrism and Black-Magic”, is located in the western part of the district Morigaon in Assam in mainly dependent on agriculture. Agriculture is the backbone of the people of the Block. Various crops grow due to fertility of the soil of the Block and the climate prevails in the Block. The greater part of the Block is alluvial plain, criss-crossed with rivers and waterways and dotted with many beels and marshes. The mighty Brahmaputra flows along the northern boundary of the Block. Kiling, Kolong and Kopili rivers flow through the southern part of the Block. The Kiling meets the Kopili at the Matiparbat where from Kopili moves westward. The Kolong joins Kopili at the Jagi Dui Khuti Mukh and from here they flow into the Brahmaputra. The Pakaria river flows through the northern part of Mayang Development Block. The general appearance of the Block is extremely picturesque. On a clear day in the winter the view to the north is bounded by the blue ranges of the outer Himalayas, behind which snowy peaks glisten brightly in the sun, while to the west and the south of the Block lie range upon range of lower hills, whose sides are covered with luxuriant vegetation of the tropical forest. There is Bura Mayang Reserve Forest Constituted under Assam Forest Regulation Act, 1891. There is also one wildlife sanctuary named Pobitara, which is famous for the Indian one horned Rhinoceros.

Kachasila Hill is an ancient temple is located under the Mayang Development Block. It is perhaps of the 9th century AD with statues of Lord Shiva and Parvati. There are also a large number of statues of Lord Ganesh.

Deosal is situated on NH-37 about 4 km away from Jagiroad town, with a big ancient temple of Lord Shiva. Shivaratri Mela is observed every year with pomp and gaiety. Local people believe that Deosal was the Ashram of Valmiki, where Sita was left by Rama.

Chanaka a village on the south bank of the Brahmaputra and at the western part of the Mayang Development Block is famous for the statues of Lord Ganesh. There is also a Ganesh temple in the Block situated at Boha Hill. There is also a temple of Narashingha at Narashingha Asharam in Ouguri village. There are also Thans, Bhagabati Than at Mayang Bazar, Kechaikhaiti Than at Mayang Tiniali. Bihu is the main festival of the people of the Mayang Development Block.

Joon Beel Mela is a unique traditional mela where people of the hills come to the plains and barter their goods according to their needs. When this practice started is not known clearly but the king of Gova gave it an organized form. In the month of Magh of Assamese Year, this Mela is held near Jagiroad town, symbolizing the mutual understanding between people of hills and plains.

Asia's largest dry fish market is situated at Jagiroad under the Mayang Development Block. Consignments of sea and fresh water dry fish from every corner of the country, particularly from Uttar Pradesh, West Bengal and Bihar

come to this market. Some amount of dry fish is also locally produced. The dry fish is mainly Supplied to the hill states of Nagaland, Manipur, Mizoram, Meghalaya and Arunachal Pradesh. Some portions of dry fish also find its ways to South Asian countries and also to Singapore and Malaysia.

Mayang Development Block is the largest Block in size in the district of Morigaon. It covers an area of 57211 hectares of land. The Block is bounded by Darrang district on the north, Tetelia mouza on the east, Kamrup (Metro) district and state of Meghalaya on the south and Pragjyotishpur Block of Kamrup (Metro) district on the west. The Mayang Development Block comprises of 6 mouzas, namely, Mayang, Pakaria, Nij Ghagua, Manaha, Gova and Uttar Khula mouza. It has 236 inhabited villages and 27 Gaon Panchayats. The population figure of the Mayang Development Block is 308072 as per the 2011 census. The schedule caste and schedule tribe population in the Block are 70,992 and 44,283 respectively. The name of Gaon Panchayats, number of villages and population both male and female, schedule caste and schedule tribe are shown in table 6.1.

TABLE – 6.1
Gaon Panchayats, no. of villages and their population under Mayang Development Block.

SL .NO	Gaon Panchayats	No. of villages	Population	Male	Female	SC	ST
1	Silsang	15	11331	5704	5627	1398	4819
2	Nelli	9	14124	7133	6991	2145	2345
3	Ahatguri	9	11245	5705	5540	3883	1160
4	Telahi	6	8343	4196	4147	698	474
5	Daosal	3	10856	5503	5353	502	1994
6	Gova	14	10860	5560	5300	464	3366
7	Dakhin Dharamtal	14	9955	5084	4871	5178	263
8	Uttar Dharamtal	7	9929	4864	5065	1748	3147
9	Jagibhakotgaon	10	9205	4615	4590	1010	739
10	Bhagjap	11	9852	4997	4855	1227	4080
11	Buraburi	3	11027	5633	5394	6096	39
12	Gagalmary Ashighar	6	7730	3998	3732	1812	0
13	Dungabori	7	10521	5215	5306	2291	879
14	Ghagua	12	13718	6932	6786	1795	5801
15	Gagalmary	7	12432	6418	6014	128	845
16	Barpak	4	8507	4380	4127	7854	2
17	Jhargaon	5	11546	5939	5607	4083	85
18	Manaha	10	12159	6184	5975	2516	2843
19	Jagiroad	3	23165	12038	11127	3279	4183
20	Paliguri	5	11973	6127	5846	2847	383
21	Burgaon	8	10626	5487	5139	8277	2
22	Lehpati	5	5098	2636	2462	0	0
23	Garmari	21	14817	7531	7286	2936	4496
24	Kuranibori	4	12319	6215	6104	930	0
25	Phabhakhaiti	11	15605	7973	7632	3544	1960
26	Mayang	19	12044	6170	5874	3785	2771
27	Bohaborjari	8	9085	4635	4450	866	101
	Total	236	308072	156873	151199	70992	44283

Source: Mayang Development Block.

6.2. AGRICULTURE:

Agriculture is defined as “ the art and science of purposeful use of soil for raising plants and breeding animals by a community. It includes, therefore, integrated set of ideas, culture, traits, skills, techniques, practices, prejudices and habits employed by the members of a given society for extracting a living from the soil” (Smith T.L. 1953).

Agriculture is the main source of livelihood of the people in the Mayang Development Block. The soil of the Block is soft and sandy which is suitable for the growth of agricultural products and various kinds of vegetables. Abundant rains and highly humid climate of the Block help to accelerate the growth of agricultural crops and various kinds of vegetables. The highest proportion of cultivable land of the Block is put under paddy cultivation. Besides paddy the other important crops cultivated in the Block are jute, sugarcane, mustard, pulses, tobacco, potato, chilly and other vegetables. The staple food of the people of the Block is rice. The farmers always depend upon the wet cultivation.

The entire Mayang Development Block except Jagiroad (C.T) is rural, economically backward and flood affected. Each year flood damages a large number of crops, washes away the domestic as well as wild animals and destroys various properties. Agricultural productivity is very low due to the application of traditional methods of cultivation. Of late transformation agricultural methods has been seen due to the advent of summer rice in the Block. Wide spread poverty, disguised as well as seasonal unemployment are the common occurrences.

There are many beels/marches and low lying areas in the Block. The water of the beels lies in the Centre of the depression and they are surrounded by luxurious grass and reeds. During the past decade, the crop has taken a swing in the

saucer shaped marshy areas as a traditional rain fed crop. Marshy and beels teemed with varieties of fishes and wild birds, lake crane, pelican, king fisher's etc.

6.3. LAND UTILISATION:

Mayang Community Development Block covers an area of 57211 hectares. Forest area covers an area of 16406 hectares. The world famous Pobitara Wild Life Sanctuary is situated in this block. The world's highest density of Rhinoceros is found in Pobitara. Each year a large number of visitors within and outside the country come to visit the sanctuary. The land under non-agricultural use is estimated to be 9143 hectares, cultivable waste land is estimated to 3064 hectares. Permanent pastures land is estimated to 2160 hectares. Land under miscellaneous tree crops and groves is calculated to about 1885 hectares. Current fallows and other fallows are estimated to 2775 and 2200 hectares respectively. The net cropped area in the Block covers an area of 26438 hectares and gross cropped area covers by 49267 hectares. The percentage of cropping intensity is 186.3 percent.

6.4. LAND HOLDINGS:

The land system of a community is based on the social system of the community. In Assam, there are two main systems of land ownership –

i) Communal land ownership among the tribes,

ii) Private land ownership in the other areas. Rytwari system of land ownership recognizing private ownership is in operation. In this system land is individually owned and inherited. The law of inheritance has created the problem of sub-division and fragmentation of holding. A farm is divided into several new farms in every generation creating smaller and smaller units of operations. (A.C.BORA, 1986: 42 - 43).

Total number of holdings in the Mayang Development Block is 37091 and total area of holdings is 436937 hectares. The marginal holdings with less than 1 hectare of land accounted for an area of 5933 hectares and number of holders accounted for 16954. In case of small holdings with size class between 1 – 2 hectares, the share turned out to be 12325 hectares and number turned out to be 408887. Semi-medium (2-4 hectares) and medium (4-10 hectares) holding the share accounted for an area of 8640 and 4040 hectares respectively. The number of semi-medium holders and medium holders are estimated to 2565 and 2950 respectively. On the other hand, the large holdings (10 hectares and above) which constituted an area of 12699 hectares and number of holders is 3735.

The pressure of population on land in the Block has been increasing. During the 3rd decades of planning, agriculture in the Block had grown at a very low rate of approximately 1 percent compared to high growth of population. A continuous flow of immigration and encroachment of land and steady growth of secondary and tertiary sectors have created a high pressure on agriculture particularly on land resources. Even the traditional cottage industries which provided quite a considerable employment of rural people has been dwindling due to unfair competition from industrial products from outside the state of Assam. This steady unemployment and under employment in the Block indicates that the net marginal productivity in agriculture might be negative. This is obvious from the fact that majority of farms in the Block are small farms below 1-2 hectares.

6.5. RAIN-FED AND IRRIGATED AREAS:

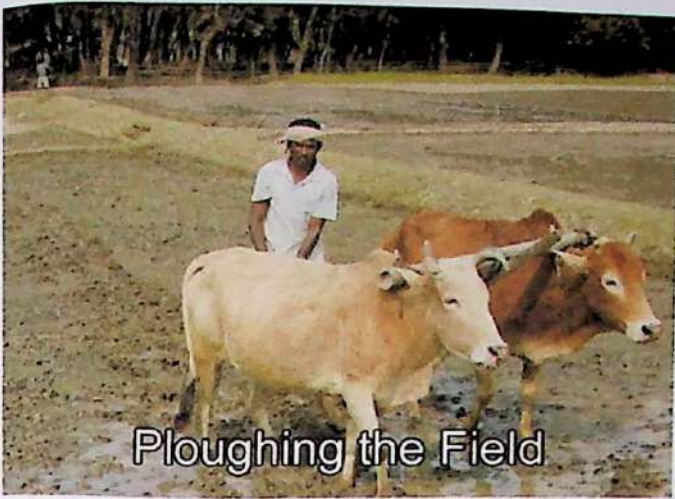
Winter and Autumn rice s are primarily rain-fed in the Mayang Development Block. However, because of adverse weather condition experienced by the farmers from time to time as well as to pressure multiple cropping and modernization of agricultural practices in the agriculture to cope with the growing

problem of food shortage, irrigation is highly essential. Over and above, for a sustained development in the agricultural sector, availability of assured irrigation facility is undoubtedly the most important pre-requisite. Thus, the importance of irrigation bears special significance in the context of efforts towards economic development of the Block too.

The total rain-fed area in the Block is 9732 hectares. The total irrigated area is estimated to about 16706 hectares of which minor irrigated area is calculated to be 15300 hectares. Major and medium irrigated area is 506 hectares. The area irrigated by other sources is estimated to about 974 hectares. It is estimated that Mayang Lift Irrigation Project would be irrigated 375 hectares.

Shamridhi Krishak Yojana is basically launched to make Assam self-sufficient on summer rice production. Boro rice is promoted through the Shallow Tube Wells irrigation in the Block. Two varieties popular in this Block are Boro-1 and Boro-2, sowing time of both the varieties is November, planting time is December/January and harvesting time is April/May. Duration of Boro-1 is 150 days and Boro-2 needs slightly longer duration of 165 days but both have 3 tonnes per hectare average yield.

Cultivation of Summer (Boro) rice in the flood-prone areas i.e., Rajamayang, Barpak, Hatimuria, Bohaborjhari, Jhargaon, Manaha, Satibheti etc. of Mayang Development Block has gained peak through large public investment, now private investment also on Shallow Tube Wells in the non-traditional areas. The summer rice has shown high productivity in the medium land at high level of technology. It has been observed that summer rice has grown faster than autumn rice and winter rice during the last few decades. Irrigated HYV summer rice in the medium land is costly to cultivate but is more productive at higher level of technology.



Ploughing the Field



Nursery



Irrigation by STW



Transplanting



Irrigated Paddy Field



Boro Paddy after weeding

After enter viewing the farmers having Shallow Tube Wells, the study has tried to find out cost and Benefit of Boro rice production in the Block with due calibrations. Average cost of per Bigha farmland Boro rice production is Rs. 5152 and per 15 Bigha, which a Shallow Tube Well could irrigate, cost of Boro rice production is Rs. 53,330. The average yield per Bigha is 24 Mun, equivalent to 40 kg and the average market price of rice is Rs. 400 per Mun. It gives a profit of Rs. 4448 per Bigha (Rs. 66,720 per 2 hectares).

Irrigation is a new subject for most of the farmers. Shallow Tube Well program does not have sufficient provisions for educating the farmers on the irrigation principles and technicalities of the summer rice production. It results in colossal wastage of fuel and water.

6.6. USE OF TECHNOLOGIES AND PRODUCTIVITY:

Attempt has been made to relate productivity with the level of technology used. It is observed that about 87 and 93 percent of marginal and small farmers use chemical fertilizers and about 56 and 54 percent of them use Farm Yard Manure (FYM) in High Yielding Variety (HYV) summer rice cultivation, respectively in the non-traditional areas. The marginal and small farmers have applied chemical fertilizers in 92 and 98 percent of the area under summer rice inadequately with high use-gap. The use-gap of FYM is higher in both the groups of farms. Cost of irrigation per hectare is 39 percent of the marginal and 65 percent of the small farmers cultivated HYV summer rice under irrigated condition in the non-traditional areas. It has been observed that the technology used per hectare is less than the recommended level and the actual yield is 36 and 33 percent lower than the potential yields of summer rice on the marginal and small farmers respectively. The mean yield of rain-fed summer rice is lower than the yield of HYV rice on both the groups of farms. The HYVs like NO 9 and Biplab performed better as

irrigated summer rice. The farmers could obtain 62 percent higher yield of this crop per hectare by cultivating HYVs in preference to the local varieties. It has been observed that out of the total area irrigated 91 percent is irrigated by Shallow Tube Wells. Low output capital ratio indicates that cultivation of HYV summer rice under irrigated condition is highly capital intensive.

6.7. ENVIRONMENTAL ISSUES OF BORO PADDY CULTIVATION:

The problem of iron toxicity is recorded in the fields of the Block. It influences the productivity as well as the quality of production unenthusiastically.

The functionality of Shallow Tube Well filter is in question as many of the irrigated fields are covered by subsurface sand. It is not only reducing the productivity of the irrigated crops but also making the farmland unfit for the consecutive other crops too. In an attempt to reduce the cost, locally made filters, i.e., bamboo strips covered by wire mesh, are used in different fields.

Assessing ground water pollution level is a very difficult task. It is more difficult to undertake a refurbishment measure, once the ground water is polluted. It may create a disaster in the Block where water table is very shallow and sole drinking water source is the ground water. Immature use of water resource in the agricultural practice may endanger the future of the communities in the Block.

When fertilizers are applied to agricultural land, a portion usually leaches through the soil and to the water table. The primary fertilizers are compounds of nitrogen, phosphorous and potassium phosphate and potassium fertilizers are readily adsorbed on soil particles and seldom constitute a pollution problem. But nitrogen in solution is only partially used by plants or adsorbed by the soils, and it

is the primary fertilizer pollutant. It is extensively used in the Block and undoubtedly increase in the future.

Insecticides and pesticides can be significant in agricultural areas as a diffuse source of groundwater pollution in the Block. The presence of these materials in groundwater, even in minute concentrations, can have serious consequences in relation to the probability of the water. Of course, the impact of pesticides on ground water quality depends on the properties of the pesticides residue, rainfall or irrigation rates, and soil characteristics. Most pesticides are relatively insoluble in water while others are readily adsorbed by soil particles or are subject to microbial degradation.

6.8. CROPPING PATTERN:

The swamp areas are rich in organic matter with available moisture and need minimum tillage with low application of manures and fertilizers. The farmers cultivate the traditional tall varieties adjusted against the level of water and avoid the risk of submergence during monsoon. The farmer often harden the seedlings at the upper edge of the saucer and gradually adjust transplanting at its lower edge when water level gradually recedes. It has been considered as a rescue crop and has emerged as an important cereal crop in the flood plains. High photo-periodism during the crop period also influences the productivity of the crop. The popular HYVs cultivated as summer rice in the Mayang Block are No. 9, Mala, Pankaj, Ranjit, Mahsuri, Jaya, Bahadur, Biplab, etc. These varieties are cultivated by the farmers in the medium as well as low lands which do not get water stagnation with irrigation, particularly in the flood-affected areas where winter rice is risky to cultivate. The cropping pattern follows in the flood-prone areas in the Mayang Development Block are:

Winter rice – Boro rice – fallow,

Winter rice – Jute – Boro rice,

Boro rice – fallow – Mustard/Pea/Vegetables/Spices in medium land adjusted under the favorable situation. In the low lying and swamp areas, Boro/transplanted early Ahu and deep water rice are cultivated. The cropping pattern differs according to topography of land availability of moisture and depth of water during the rainy season. The needs of food security and family income in the marginal and small farms often predominate the cropping pattern. Rice is an important cereal for staple food influencing the cropping pattern in the Block.

6.9. MARKETING SYSTEM:

The field study has shown that there is a traditional system of agricultural (Boro Rice) marketing in the study area. This traditional system of agricultural marketing can be divided into two categories, viz., primary market and terminal market. In the primary market farmers sell their surplus Boro rice to the village traders and agent of the millers and wholesalers. Sometimes, marginal and small farmers have to sell as portion of their surplus produce during the harvesting season or just after the harvest when the prices are depressed, in order to repay the loans taken against standing crops. All the middlemen like village traders, agent of the wholesalers and millers, village money – lenders sell their procured crops to the wholesalers and millers (after milling) distribute these among the consuming centers through retailers. The wholesalers and millers used to sell out a portion of those produces.

The farmers, therefore, of the sample villages have been deprived of getting remunerative price of their produce due to prevalence of defective traditional system of agricultural marketing. The main defects from which the marketing of Boro rice suffers in the Block have been discussed below.

i) Poverty and indebtedness of the farmers:

Because of poverty and indebtedness, unsatisfactory nature of communication, lack of retaining power and the need for finance, the farmers have to sell their produce soon after the harvest is over at the very unreasonable prices which stands as the most important defect of Boro rice marketing in the Block.

ii) Superfluous Middlemen:

In Mayang Development Block, majority of the farmers dispose of their produce in village itself. The result is the interference of most middlemen between the producer and the final consumer. The existence of a long chain of middlemen reduces the share of the consumer price received by the actual farmers.

iii) Transport Bottlenecks:

Transport bottleneck is another perpetual defect of agricultural marketing in the Block. The existing transport arrangement in the primary markets is lamentably poor.

iv) Malpractices of the markets:

In traditional markets, especially in the Block, there are some malpractices like manipulation of weights and measures, adulteration etc. which stand as a barrier in the Boro rice marketing of the Mayang Development Block.

After all marketing is the ultimate aim of all producers. If we develop agricultural marketing especially Boro rice marketing, we will be able to encourage farmers to produce more which induce them to sale in the market. Regulated markets in the Block may be the right answer. They can be great help in removing the ills of the present marketing system. Regulated markets should be able to reduce the expenses of buying and selling, as also ensure a fair support price for products, while saving the farmers from exploitation.