

## Chapter VIII.

### MAJOR FINDINGS: PROBLEMS AND PROSPECTS

The study has revealed that the agricultural productivity within the district is varying for different crops across blocks; the crop combination too is not similar. The growth trend for the area cropped also differs among the blocks. Attempts to club blocks based on a pattern for the above parameters do not really provide any definite cluster, though for individual parameters the clusters formed are distinct. So, to analyze and present the findings of the diversity we consider a grouping which is more pronounced and are based on physiographic, socio-economic and agricultural parameters and we get Tal, Barind Diara as the regions. These demarcations coincide with the political demarcation. Herein we provide an idea regarding the problems faced by these regions and highlight the difference in the parameters across blocks.

The findings have been presented in terms of problems and prospects in this chapter. To get a composite overview the chapter has been divided into two sections viz. Physical and Non-Physical.

#### **a. Problems and Prospects of Physical determinants.**

This section has been further divided into individual determinants viz. structure and relief, flood, soil, water depth and climate.

##### *Structure & relief:*

Structure and relief is considered to be a constant parameter in any agricultural productivity analysis. Improvement of productivity is addressed by changing the factors in accordance to the structure and relief. Our analyses highlight certain features of the structure and relief for the district.

The Tal region, which is a low-lying area, is subjected to inundation by floodwaters of Kalindri River. The region reveals a gradual slope towards south

and west, so flooding of Kalindri affects Harishchandrapur-I, Harishchandrapur-II and Ratua-I. Moreover 15.6% of the area is low lying.

Barind region, which is relatively an upland tract locally referred as *danga* region is comparatively less affected by flood. But the flip side of this is the region is not suitable for multiple cropping. The analysis has shown that Barind region is characterized by bi-crop cropping pattern, while its counter parts Tal and Diara are six and eight-cropped region.

Diara region is mainly flat land and has the Ganges as its boundary towards the western side. This makes this region comparatively fertile but the shifting nature of the Ganges has affected the region. The impact of shifting rivers and flooding has been dealt in the following section.

As mentioned earlier in the process of enhancement of agricultural productivity, structure and relief is considered to be a constant parameter but latest studies have shown that with policy intervention and Government investment in building of dams, connecting rivers through canals, this constant parameter can be made conducive for increasing productivity.

#### *Changing course of rivers and flood:*

Malda district is infamous for its regular floods. Some parts or the other is affected by flood on annual basis. The major flood in 1998 had a devastating impact on agriculture in the district. Before delving into analysis of flood impact we highlight the problems arising due to changing course of rivers. The Kalindri, Mahananda and the Ganges happens to be the major rivers of the district. Ganges, which acts as the western boundary of the district, has Manikchak, Kaliachak-II and Kaliachak-III on its bank. The changing course of Ganges and drifting towards east is impacting the area of Manikchak severely. Due to this change of course Manikchak has lost 13,203.94 acre, of land to the river. In total 15 mouzas are affected (Appendix-VIII.i) out of which of which 5 mouzas have totally deluviated. Kaliachak-III is comparatively less affected due to the shift with 3857.2 acre of land deluviated in three mouzas

## 8.1 Flood in Malda



Kaliachak-II is the most impacted block as 18 mouzas amounting to 17,972.03 acre have been fully deluviated while in 8 mouzas 6,099.87 acre has deluviated. Thus we see that the Diara region is impacted to a great extent by the problem of deluviation and this has created a sense of fear amongst the farmer of this region situated even few KM. from the bank of the Ganges. (Appendix-VIII.i & VIII.ii)

The severe flood of 1998, which impacted the whole district, had a direct impact on the agricultural produce for that year. But the crop failure for any particular year has its cascading effects, even for the next two harvesting year. The non-availability of seeds for following year of flooding is a defined problem for the farmers. Moreover the non-repayment of loan aggravated with no income impacts the farmer's financial position. His following years cash flow is imbalanced. Thus we find that flood act as a trigger point of the vicious circle of poverty. (Appendix-VIII.iii)

*Soil:*

Soil type, soil tenure and soil nutrient status is considered to be important physical determinant to influence agricultural productivity. The analysis has shown that these determinants are not similar within the district, so certain crops are cultivated in particular region and the productivity level too varies across the regions. It has been seen that Barind region is dominated by older alluvium soil. As this red soil of old alluvium formation is composed of clay containing iron and lime which becomes extremely hard in the cold weather, Rabi crop cultivation in Barind region is not effective. So the productivity in this region for oil seed are low and a negligible amount of area is under pulse cultivation.

So we find Barind, which is dominated by clay and clay loam doesn't support multiple cropping, is predominantly a paddy-cultivating region with bi-crop cropping pattern of Aman and Boro.

The Organic Carbon (O.C.) content of soil in Malda is predominantly in the low and medium-low range. This implies that fertility level in the district is

comparatively low. If we consider the range of O.C., 0.2% to 0.82%, which reveals improper management of soils. Moreover, the phosphorous content is very low across the blocks while potash content varies from Very low to High. This provides an overall idea of the poor soil fertility status of the district.

The *ph* level, another important component of soil nutrient status shows that while Tal and Barind has slightly acidic to neutral *ph* values, Diara has normal to alkaline values. As most crops are suited to neutral to slightly alkaline soil, the low *ph* value of the soil in the district is suitable for only paddy cultivation. Thereby production of high return vegetables and oilseeds are low.

#### *Ground Water Depth:*

We have seen that ground water depth plays a significant role in determining the feasibility and the type of irrigation. In the district ground water level varies significantly amongst the regions.

The water level in Diara and Tal region is found to be comparatively high while that in the Barind region comparatively low. Due to this differential water level investment required in Barind region is comparatively higher. Moreover, with the water depth of 100 to 200 metre in Barind makes D.T.W. as the only means of regular irrigation. As the set-up cost for D.T.W. is very high, state intervention is required or else it is only the well off farmers who can afford it. As in Barind region the average land holding is not impressive expectation of D.T.W. being set-up by a group of farmers looks distant. Tal and Diara region, which have comparatively better irrigation facility, can support multiple cropping.

In Barind region, if irrigation can be provided on a sustained basis the prospect of change in the cropping pattern and crop productivity is likely.

#### *Climate:*

Rainfall, humidity temperature etc. which are main components of climate do not vary much from region to region within the district. So to use climatic

variations as the causal factor for productivity variation is not justified. However, the climate has a major role in determining the overall productivity of the district and in this direction the analysis of monthly rainfall data shows that below normal rainfall (Appendix-VIII.vi) had impacted the productivity of Aman in 1996 and 1998.

**b. Problem and Prospect of Non-Physical Determinants.**

This section as the name suggests tries to explore the problem in availability and accessibility of various non-physical determinants viz. size of land holding, irrigation, seed, fertiliser, pesticide, labour, transportation, market etc.

*Size of Land holding:*

Average operational land holding of Malda district equaled the average operational land holding of West Bengal. In 1995-96 (the last time point for which the data is available) average holding of the district was at 0.86 hectare and in these eight years with the population rise the operational holding is expected to come down to around 0.7 hectare. This figure itself gives an idea that the farmers of Malda are subsistence farmers. With land reforms introduced in West Bengal and land ceiling act enforced the disparity has been minimized to a great extent but this in turn has created a low level equilibrium. Herein the farmers own land but the size of the holding is not economical.

As per the Agricultural census, West Bengal, though operational holdings of 10 hectare and above is considered to be large holdings; only 173 such owners are found in 1995-96. This gives an idea that the introduction of mechanized farming is not an economically viable proposition. Moreover, the tracts of land are being divided with 'ails' to enable water logging. This further reduces the effective operational land holding. During the field visits it is found the farmers hold land in different parts of the mouza i.e. a continuous stretch of land is not available. Thus proposition of mechanized farming is considered to be a theoretical proposition for the district with no practicability.

Analysing the land holdings based on the ownership pattern it is found that the average land holding of SC is 0.85 hectare while for the ST it is 0.99 hectare. With the average operational holding of 0.86 hectare for the district as a whole in 1995-96, these figures imply that the average land holding for the General Caste is below the district average. Muslims who are considered in the General Caste brings this figure down. It is basically because of the bigger sized family of the Muslims.

To bring about a change in the operational holdings it is suggested that community farming be tested in certain mouzas on a trial basis. Depending on the success of such community farming the results can be demonstrated to others. The problem that is foreseen is the political polarity in the society.

#### *Irrigation:*

The status report of irrigation for Malda district is not impressive, as only 43.7% of the net sown area of the district is irrigated. The situation is grim in Barind region with only 30.4 percent of the area as net irrigated area. This problem can be explained with the physiographic features and the historical developments. 'Tangra', a tributary of the Mahananda, is the main river, which passes through the Barind region. This river being a seasonal river R.L.I. is not effective in the region. Moreover, the region being a high-land ('Danga and Arkandar') the natural flow of the water is away from the region. As previously explained the water depth in the region is comparatively low which makes D.T.W. as the only means of irrigation through ground water. The high investment involved in the set-up of D.T.W. is a barrier for setting up of this type of irrigation in Barind region. State owned D.T.W. faces the problems of maintenance and regular monitoring. Irregular power supply magnifies the problem.

The development over the decades wherein tanks, the major source of irrigation in Barind, are being converted to farmland augmented the problem. " There is a tendency towards the gradual diminution of the water-supply from these tanks

in the Barind. Some of them have silted up, and there is no one in the locality with the initiative or energy to have them re-excavated. The banks of others have been encroached upon and ploughed up by the tenants. The landlords following a rather shortsighted policy have settled the banks in order to increase their rent rolls by a few rupees. In some cases the beds of tanks have been settled as well. Where the banks are brought under cultivation the inevitable result is that they become flattened out". (*Carter 1925*)

*Seed:*

In Malda district with low literacy level and less penetration of technology, the usage of HYV seeds are limited. It has been found that though the farmers use HYV seeds but it is not a continuous process i.e they use these in alternate years or with lower frequency. Moreover the HYV seed usage is not complimented with proper irrigation, fertiliser or soil nutrient.

The farmers tend to use their own farm produces as seed in years when the cash flow is not adequate. The availability of these seeds is very poor which have a direct negative impact on the yield.

The farmers also tend to use 30 kg of seed per acre and thereby increase the number of seedlings. It is way off from the suggested 10 kg per acre to get good healthy seedlings.

Another problem observed during the field visit was that the farmers do not adopt proper seed treatment procedures.

State Seed Corporation (SSC) and National Seed Corporation,(NSC) which were formed with the objective of developing new improved variety of sees, do not support the farmers of interiors of Malda.

These imperfections make the seedlings of poor health. This has a direct impact on productivity. Proper intervention from the state and higher literacy level

coupled with increased affordability can make a change in the agricultural scenario of Malda.

The availability of seeds is another problem identified. Seed outlets in the district are located in the urban centers. Thereby accessibility of these outlets by farmer of remote areas is not feasible. The seeds available in the local *hats* do not satisfy the storage requirements and also are charged with a premium. The combined effect is reluctance to the usage of HYV seeds.

The farmers who use their own farm produce, as seeds do not have proper storage facilities. So the yield of these seeds decline.

The farmers accept that rotation of seeds amongst themselves result in fresh seed for each farmland which can improve the yield. But it is found that in reality they do not practice this.

#### *Fertiliser:*

The usage of fertiliser in Malda district is low and the ratio of N, P and K in the soil is not optimum. With low potash content and very low phosphorous content in the soil of Malda, it is expected that the farmers will be attending to management of phosphorous and potash. But it is found that the farmers use more urea, a nitrogenous fertiliser. Thus, proper soil management and soil nutrient management are not done in the district. Moreover usage of micronutrient specially zinc in the fertiliser schedule is absent. Thus we find fertiliser usage do not follow any specific pattern. The farmers are under the impression that usage of nitrogenous fertiliser brings growth in the plant. They are not aware of the concept of nutrient balance. Crop rotation is another means of maintaing the soil fertility effectively. The farmers are aware of the fact that crops need to be rotated, but they are more comfortable with traditional way of farming.

The other problem faced with fertiliser usage is accessibility to fertiliser selling outlets. These outlets are located in the urban centres. The makeshift outlets are

found in the weekly local *hats*. The farmers are required to purchase their fertiliser requirements from these makeshift outlets. The consultation regarding the latest fertiliser and the most effective fertiliser is not available to them. It is the word of mouth that is being used to take such vital decision regarding the proportion of fertiliser usage and no scientific methodology is used. Usage of right fertiliser in correct proportion with suitable crop combination backed by proper analysis of soil content and nutrient level is likely to impact the productivity of crops in a positive manner.

*Pesticide:*

The nature of problem faced regarding pesticide is similar to that of fertiliser. Here too the farmer uses pesticide based on the convention, tradition and word of mouth. It is found that they are also not aware of the effects of these pesticides on the crop health. They are also not aware of the safety measures that need to be adopted while applying these pesticides. It has been found that farmers' health is being affected and cases of skin diseases due to pesticides have been observed.

To cater the needs of small and marginal farmers pesticide manufacturing companies are now packaging pesticides in low volume SKUs (Stock Keeping Unit). But, the problem a farmer faces is the initial investment to purchase spraying machines. So this acts as a usage barrier. To tackle this, the farmer hires these machines.

The problem related to marketing distribution of pesticides is similar to that of fertiliser.

*Labour:*

Labour that is considered to be a major factor of production and in less developed Malda should be found in abundance. This availability of labour had resisted introduction of capital-intensive farming technique. But, in the recent past it is found that labour supply is a problem during harvesting and sowing

season. This problem can be related to the socio-economic change that the region is witnessing.

With low productivity and high pressure on land, members of the family are forced to migrate and with increased literacy, educated members are averse to consider farming as their occupation. The result is low supply of labour during the peak season.

Another problem noticed in the district, which is a reality in this country, is that the women labourers are paid less than their male counterparts. This differential payment structure has forced women to take up other means of earning like *bidi* binding, housemaid etc. Thus we find that socio-economic changes have forced labour problem in the agricultural scenario too.

#### *Transport and Accessibility:*

In modern day farming specialization of activities is the basic tenet and with more use of manufactured products selling of produce in predefined markets, transportation and accessibility assumes greater importance. In Malda district the problem of accessibility is acute as the villages are linked with unmetalled roads whose condition deteriorates severely during the rainy seasons. This creates transportation of aman, boro, jute by motor vehicles impossible. Bullock carts and horse carts are the only resort of rural people for transport. Seasonal *nalas* and streams with no bridge across aggravate the situation. In such a situation farm produce are carried by human beings across these natural obstacles.

There is no proper mechanism for transporting the produce from the village to the market in a collective manner. As each individual farmer is expected to sell his own produce so transporting it in vehicles is not an economic proposition for him. So it is felt that if the farmer of a particular village forms a co-operative, and can transport the produce of the village, it would be economically rewarding.

In relation to transport of mango, the farmers face a major problem of non availability of truck during the peak seasons, The mango of Malda district which are generally sold in Kolkata, Siliguri and Agartala need to be transported on time as otherwise this perishable fruit do not command the right price. As demand for trucks rise during a particular part of the year, increase of fleet of vehicles is not justified to the private transporters.

Development of the rural roads and introduction of schemes for improvement of the traditional modes of transport are much felt necessity of the district for improving the socio-economic condition of the villages.

*Market:*

The farmers' hard work of the year is rewarded at the market, so proper marketing facility facilitates farmers to sell their produce at right price. In Malda district marketing facility is still traditional wherein the farmers' produce are sold in the *hats* or local markets where from it changes hand in the hands of businessman. Thus the profit margin is not completely passed on to the primary producer.

The condition of these rural markets is poor, as minimum facility of shed, drinking water, drainage and public latrines are wanting. Some markets are extremely congested for the market users. Moreover private ownership of such *hats* and market is the main obstacle for the administration to effect desired improvements. Half hearted attention, of the Government, to improve the markets and marketing practices, in the rural areas of the district, is not sufficient to bring about the desired improvement in this field. All such private *hats* and markets in the district should be transferred and vested with public institution like Panchayats and regulated market committees.

The two regulated market in Samsi and Englisbazar are not sufficient to support the district's requirement. No such market in the Barind region is a problem in itself.

The role of middlemen in procuring the produce in small quantities and then able to sell at a higher price in bulk and at a time when the prices are high gives an indication of the imperfections in the market.

Another problem identified is marketing of mango, an important commercial crop of the district. There is no definitely earmarked place/market where the wholesale transactions of the fruit can take place. The growers usually sell the garden as early as in pre-flowering stage and there is series of changes in the ownership of fruits at the different stages till harvesting. After the harvest the fruit is packed in orchard and despatched to its destination at different terminal markets in the country by the traders. As a result of this the percentage share of the growers in the consumers price of the fruit is as low as 20 percent

*Storage Facility:*

The cultivators sell their goods primarily jute to *farias* or village merchants immediately after harvest due to storage problem and due to urgent need for cash. Although eight purchase centres for jute (D.P.C.-4 numbers, Co-operative-3 numbers and C.A.D.P.-1 number) are functioning at Harischandrapur, Tulshihata, Old Malda, Nawbabganj and Bulbulchandi, it is observed that the actual benefit of the scheme is derived by the middlemen instead of farmers for whom the Government are so concerned.

The growers face a big storage and transport problem after the harvest of paddy and wheat and the middlemen and village traders take this opportunity to exploit the farmers and make big profit

*Agricultural Credit:*

The purpose of agricultural credit is defeated due to corrupt practices in both supply and demand sides. The farmers who avail agricultural credit are found to utilize the amount for personal consumption and are not in a position to repay. This makes them defaulters and they are unable to avail any further loan. It is

also observed that government schemes of providing agricultural credit are spotted with corruption and political favouring.

The bank that provides the credit also indulges in corrupt practices of taking commissions for sanctioning loan amount. Thus we find that organized credit market is not effective.

*Other problems:*

Other than the problems defined above the agricultural sector of Malda also faces the problem of land acquisition by Government, international boundary, political rivalry etc. Government had to acquire large tracts of land for development projects like Malda-Eklakhi rail route, widening of the National Highway, etc. Similar acquisition happened for setting up of B.S.F. camps in the district. These land acquisitions have made many farmers land-less and the compensation payment is delayed and in many cases not paid.

204 Km. of international boundary, with Bangladesh is a cause of another major problem for the district. It is complained that cattle theft and theft of crops and mangoes in the border areas is prevalent as Bangladeshis take the advantage of porous border. The fencing activity that had started some years back and presently complete gave birth to another problem. As per the understanding between the two countries the fencing happens to be 400 meters inside the Indian territory from the international border.

The farmers who owned the land between the fencing and the border are issued with passes to till their land. As there is no such fencing on the Bangladesh side the Bangladeshi take the advantage of crossing the border in the night and harvest the crops from the Indian farmers' land.

So to summarise, we find the present agricultural scenario in Malda is dotted with problems like:

- Low crop productivity
- Non-availability of good quality inputs – seeds, fertiliser and plant protection measure
- Cultivation practices traditional and in many cases counter productive. For example:
  - Late raising of nursery and late planting of paddy, consequently late to very late sowing of wheat.
  - Very high seed rate used in raising of paddy nursery, viz. 30 kg/acre
  - Local and own produce used as seed
- Imbalance use of fertilisers: Nitrogenous fertilizers applied in much excess, use of phosphatic and potashic fertilizers almost negligible, zinc hardly applied
- Plant protection measures either absent or defective for lack of knowledge
- Farmers too vulnerable to existing market forces