

CHAPTER VIII

SUMMARY, CONCLUSION AND SUGGESTIONS

I. SUMMARY OF FINDINGS

The main objective of this study is to find out the determinants of farm mechanization. In this study we have hypothesized that level of agricultural landholding, level of education of farmer and access of farm credit determine the farm mechanization. Here we also tried to measure the impact of farm mechanization on employment structure, production and productivity, crop diversification, farmers' income etc. The other prime objective of this study is to examine the state of market for services of agricultural machineries, to compare the extent of farm mechanization between two districts namely, Bardhaman and Dakshin Dinajpur. As we know Bardhaman district is comparatively developed in respect of farm sector compared to Dakshin Dinajpur, we want to find out the factors behind low productivity in farm sector in Dakshin Dinajpur district.

In Chapter II we found that farm mechanization is not a new occurrence of farming. Over the era, farmers are trying to use machineries whether it was wooden made farm equipments and driven by man power. Peoples tried to get higher productivity in farm sector because it was the main source of income in ancient time. Gradually peoples dependent of farm sector tried to use more efficient farming equipments in farm sector. Before independence Indian agriculture was mechanized by the technological development of England. Few power driven machineries imported from England at that time in some areas of Uttar Pradesh. Beginning of independence to meet the huge requirement of food Indian government started to import few other machineries such as Tractor, Power Tiller, Thresher etc. from England and Japan. On the other hand, farmers are started to use high yielding seed varieties to get higher productivity. As a result Green Revolution comes in farm sector in Indian agriculture in mid of sixties. But it is noticeable that impact farm mechanization and use of high yielding seeds did not influence over all farm in the nation. Rather its impact was heterogeneous in nature across the country. Only in Punjab, Haryana, Uttar

Pradesh achieved higher mechanized farming practice and also only for some common crops say, wheat, paddy, potato, mustered etc.

In chapter III we have discussed the pattern and structure of agriculture of Dakshin Dinajpur and Bardhaman districts. Here we found that the economy of this two districts is much dependent on farm sector. It could be found that more or less above 60 per cent peoples are dependent on farm sector directly and indirectly. Landholding has been going down over the years dueto population pressure and urbanization. Recently 81 per cent farmers are marginal category farmers having less than one hectare land. Farmers are cultivating different crops in their small landholdings. They are using chemical fertilizers to get higher productivity. Mainly rice, wheat, mustard, pulses, potato, chilly, jute, vegetables are cultivated in these two districts. Three types of rice are being produced in the two districts viz. Aus, Amon and Boro. Among which Boro rice is produced in the areas where irrigation facility is available. The productivity of this rice is very high. Recently acreage under Boro rice cultivation has been going down because of water shortage. So Wheat cultivation has become an alternative to this crop because for Wheat there is not requirement of huge irrigation and for that its cost of cultivation is less compared to rice. It was found that Bardhaman district is more advanced in farming compared to Dakshin Dinajpur district. Farmers of Bardhaman are more mechanized. Their landholding size is also quite high where they are using improved machineries and high yielding seeds. Most of the farmers of Bardhaman district are using institutional credits by which they are enjoying different types of government provided subsidy facility to buy different inputs of agriculture.

Profile of the two selected districts of West Bengal has been narrated in chapter IV of this study. We have seen that West Bengal is densely populated state in India having 1029 persons per sq. km according to census 2011. It has been reported that this state is the fourth most populated state in India. It could be found that West Bengal is covered by three countries and four states in India. These countries are Bangladesh, Nepal and Bhutan and four states are Orissa, Jharkhand, Assam and Sikkim. Percentage of Scheduled Caste population is quite high having 23 per cent in West Bengal whereas Scheduled Tribe population is 5.50 per cent. Among total work force 38.8 per cent work force belongs to Scheduled Caste population in this state. Literacy is quite better having 68.64 per cent

which is higher than the national average of 65.38 per cent. In case of the two selected districts literacy level is very poor in Dakshin Dinajpur district. However, in case of education, farmers of Bardhaman are comparatively better than Dakshin Dinajpur district. Since the farmers are not much educated, they are not aware about the facilities provided by the government. It was found that total 88 farmers out of 120 have opened account in banks in Bardhaman district whereas the number of account holder is 56 in Dakshin Dinajpur district out of 120 selected farmers.

In chapter V we have discussed the determinants of agricultural mechanization. We found that landholding is one of the most important factors which determine the agricultural mechanization. It is well known that farm production in total may increase if we increase the size agricultural land or it may increase if it is possible to improve the level of productivity. The first option is not possible because huge population pressure, urbanization and industrialization on agricultural land gradually reducing the landholding size. So the second option which is increase of productivity is possible if we use high yielding farming factors along with proper mechanization in farm sector. Because agricultural mechanization is the compatible factor to use the modern high yielding ingredients of farming. We found that there is a positive relation between the level of landholding and agricultural mechanization. Farther, we have tried to investigate the relation between access of farm credit and extent of farm mechanization. It was our hypothesis that access of credit determines the level of farm mechanization. To prove the hypothesis we have used the ANOVA model and found access to credit affect the farm mechanization positively. Again we have used tables and diagrams to show the positive relation between the above variable and conclude that they are positively related. Finally, we have established our third hypothesis which is that level of education determines the farm mechanization. Educated farmers can enjoy the government provided assistance on agriculture. Farmers can use different types of productive factors which are provided by the government at subsidized rate. To avail this facility farmers have to use Kisan Credit Card (KCC) through banking system. So the farmers who are educated and aware they are taking such facilities. On the other hand, illiterate farmers are afraid of open in account in the bank due to complicated paper works and lack of fairness of land paper. To examine the impact of education on farm mechanization we have used ANOVA test and found that education determine the level of farm mechanization. In addition to that we have used the correlation coefficient to examine

the nature of relation between education of farmers and extent of farm mechanization and we found the strong positive relation between the two variables.

In the last chapter we have made a comparison between two districts on degree of farm mechanization, use of farm inputs and cropping pattern. It was found that Bardhaman district is more advanced in agricultural farming compared to Dakshin Dinajpur district. Because landholding size is quite good in Bardhaman where farmers are using big farm machineries such as tractor, combined harvesters, rotavator etc. Our primary data show that only 20 per cent farmers are dependent on animal drawn machineries to cultivate their land. They are highly mechanized in all types of farming operation such as ploughing, threshing, seedling, irrigation etc. On the other hand, farmers of Dakshin Dinajpur still dependent much on old farming system. Here more than 50 per cent farmers are doing their farming operation with the help of animal power in the case of ploughing, harrowing, threshing etc. Since size of landholding is small in Dakshin Dinajpur district, farmers are not getting advantage of benefits of using modern machineries such as combine harvester and other machineries. Farmers of Bardhaman district is also quite good in education compared to Dakshin Dinajpur and as a result they are getting others advantages such as credit facilities, government provided subsidies, government price for crops etc. Similarly, comparison has been made in case of use of farm inputs such as seed, fertilizer and irrigation system. It has found that more or less all farmers of Bardhaman are using high yielding seeds whereas farmers of Dakshin Dinajpur district are using high yielding seeds along with local seeds (manually stored crops such as paddy, mustard, wheat, onion etc. and use it as seed). In case of fertilizer use, almost every farmers of Bardhaman district are using chemical fertilizer whereas farmers of Dakshin Dinajpur are using organic fertilizer along with chemical fertilizer. Canal system of irrigation is present in Bardhaman district from where farmers using cannel irrigation at a lower cost. But this facility is not available in Dakshin Dinajpur district and farmers are dependent on ground water irrigation system. Since there is difference in farming technique, farmers of Bardhaman are getting higher productivity of land and labour compared to Dakshin Dinajpur district.

II. CONCLUSION

On the basis of surveyed data we can conclude that across the various size of landholding farm mechanization is different. If landholding size increases there is more scope to use more machinery to get higher productivity in farm sector. Similarly, availability of credits also affects the degree of farm mechanization because poor farmers are able to purchase costly farm machineries. If there is proper management of farm credit farmers can enjoy the facility of modern farming system. On the other hand, we found that education is also a prime factor of agricultural mechanization. If the level of education increases then level of farm mechanization also increase. Educated farmers are aware about the government provided assistance for purchasing farm inputs especially in farm machineries. To increase the use of farm machinery government is providing expensive farm machineries such as tractor, power tiller, rotavator. Combine harvester etc. at subsidized price. So the educated farmers are getting advantage of subsidy on different farm inputs.

In our study we have found that Bardhaman district is much better than Dakshin Dinajpur district in case of practice of modern farming. Farmers of Bardhaman are quite educated and using modern technique of farming. They are getting higher productivity and better quality crops as well as they are selling these crops at higher price. Since farmers of Bardhaman are quite educated they are also aware about the price provided by government. Because at the time of harvesting huge supply of crops reduce the price and in many times distress sale found in farming sector. As a result at that time government take initiative to purchase the crops at profitable price. But the farmers of Dakshin Dinajpur are not much educated and they are far away from modern technique of farming. So the facility provided by the government cannot enjoy by the farmers of this district. Similarly, in other areas such as credit accessibility, fertilizer use, pesticide use, labour use etc. we have found disparity between two districts.

III. SUGGESTIONS

Taking into account the different aspects of the study the following suggestions are made for the improvement of farming and farmers of the selected two districts in particular and to the whole state of West Bengal in general.

8. To solve the problem of fragmented landholding the system of cooperative farming can be adopted where farmers can have the advantage of large landholding to use big machineries.
9. Government should provide information regarding farming facilities through available sources of communication such as TV channel, newspaper, mobile phones etc. Awareness program can also be made through panchayat and Blocks Development Offices because villagers are much attached with these offices.
10. Government should concentrate to enlarge the branches of banks in remote areas so that farmers can achieve the banking facility. Similarly, to bring more or all farmers under the pavilion of banking habits opening in Bank accounts should be simplified. Because most of the farmers are less educated and they are afraid too much paper works to open account.
11. It is also mandatory that government should take the care of the irrigation system. Because now a days it is a big problem of farming. There should be sufficient irrigation facility so that farmers can use the water as they require for their crops.
12. It also very important that as much as possible government should provide high yielding seeds, fertilizers, pesticide etc. through agricultural cooperatives. Although agricultural cooperatives are doing such activities but it is not adequate.
13. To reduce the distress sale government should help to increase the number of cold storage because for some perishable crops such as vegetables, fruits etc. it very important. Government can extend the facility of warehousing where farmers can store their surplus crops and can sale at the time of higher demand.
14. It is also quite important that government should provide credit to petty traders who are trading the agricultural crops. If they get loan from banks at lower rate of interest they can purchase farm crops directly from farmers and sale these crops in nearby towns where they get higher price. In this way farmers can save the cost of transportation and get profitable price.

Finally, it is very important to ensure that farmers should take care of the health of soil. Because excessive use of chemical fertilizer reduce the natural fertility of soil. So government should take initiative to use the organic fertilizer. On the other hand, it is also very essential that the cropping pattern should be consistent with small irrigation is requirement. For example we can say that Boro cultivation requires huge irrigation and it more or less completely depend on ground water. As a result, water layer going down gradually and drinking water crisis is now a common phenomenon throughout the country. So alternative farming practice should be developed which consume less water for irrigation. We found in our study that crop diversification is adopted by farmers because they have understood the problem of water shortage.