Conclusion & Suggestions
CONCLUSION AND SUGGESTIONS

The present study is an attempt to examine the existing level of agricultural development and its impact on socio-economic transformation in Malda district. Administratively the region is divided into fifteen community development blocks. The main findings of the research are based on computation of data collected through extensively secondary sources as well as field survey and empirical observations.

Because of abundance of rivers (both large and small) and consequent alluvial soils, Malda has been an important agricultural district since antiquity and commands dense human settlements within its boundaries. Rice cultivation has traditionally been high in the district, making it the breadbasket of Bengal. Shifting rivers and overall ecological changes have however, left an inevitable stamp on the present patterns of human settlement, as a consequence of which settlement density varies considerably across the district. A large part of the Diara, now the most intensely settled region of Malda, began to attract habitations from the early 20th century, after the alluvial ‘Chars’ (lands vacated by a river shifting its course) exposed by the Ganga’s west side migration were opened for revenue settlements. The region on the other hand was in earlier times sparsely habitated and had a substantial forest cover. Relative scarcity of water in this region had made it unsuitable for intensive agriculture. The overall growth of agriculture and allied sectors in Malda has been very slow. Slow growth is a matter of serious impediment towards the target for achieving 4% annual growth in agriculture.

The land use classification of Malda has been made with a view to derive maximum benefits from each type of land whether agricultural or non-agricultural. The land classification envisages in grouping of lands according to their suitability for producing plants of economic importance. It has been noticed that marginal changes have been occurred in all the land use categories in Malda district during the study period. During the study period, positive changes have been noticed in non-agricultural uses, land under miscellaneous uses, culturable waste land and fallow land other than current fallow, whereas negative changes have been observed in current fallow and net sown area. The proportion of net sown area has sharply declined from 222.91 thousand hectares in 2000-01 to 217.98 thousand hectares in 2010-11. This ought to be declined because of urbanization, construction of buildings and developmental works (roads, railways etc.).
Cropping patterns of a region are the extent to which the arable land under different agricultural activities can be put to use. The agricultural fields of Malda district are dominated by the cultivation of foodgrains (cereals and pulses). Among the foodgrain crops, rice (*Oryza Sativa*) is the main staple food in this area and also dominate the district’s agricultural landscape covering about more than half of the district’s total cropped area. It is observed that the area under foodgrains, oilseeds and cash crops decreased during the study period. The reasons behind decrease in crop production of the district are seasonal migration of the people to other state in search of alternative works, less involvement towards agricultural practices, low return from the field and fear of crop loss. During 2000-01, cereals occupied 74.19 percent while pulses occupied only 9.26 percent. Oilseeds covers 9.41 percent and cash crops covers only 7.14 percent of the district. In the year of 2010-11, cereals occupied 75.50 percent while pulses occupied only 5.67 percent in the district as a whole. In case of oilseeds, it covers 10.76 per cent and cash crop covers only 8.08 per cent.

An analysis of growth rate in area and production of individual crops indicates that rice is the leading crop and occupied an area of 213.30 thousand hectares during 2000-01. It has since decreased to 200.80 thousand hectares in 2010-11. As against this the production of rice was 536.20 thousand tonnes in 2000-01, it has decreased to 636.50 thousand tonnes in 2010-11. The average yield of rice rose up from 2513 kg per hectare in 2000-01 to 3140 kg per hectare in 2010-11. Wheat occupied an area of 49.30 thousand hectares in 2000-01 and the area under its cultivation increased sharply to 47.60 thousand hectares in 2010-11. The production of wheat has recorded 129.10 thousand tonnes in 2000-01 and it has increased to 144.00 thousand tonnes in 2010-11. The average yield of wheat was 2616 kg per hectare in 2000-01. It has been decreased to 2220 kg per hectare in 2005-06 and again increased to 3027 kg per hectare in 2010-11.

The area under masur was 7.01 thousand hectares in 2000-01 and the area under its cultivation decreased to 5.68 thousand hectares in 2005-06. It has declined sharply to 3.62 thousand hectares in 2010-11. The production of masur has recorded 7.54 thousand tonnes in 2000-01. The production of masur decreased to 4.67 thousand tonnes in 2005-06 and it has again decreased to 3.29 thousand tonnes in 2010-11. The average yield of gram was 1075 kg per hectare in 2000-01. It has been decreased to 820 kg per hectare in 2005-06 and increased to 908 kg per hectare in 2010-11.
The area under maskalai was 16.26 thousand hectares in 2000-01. It has declined sharply to 7.47 thousand hectares in 2010-11. The production of maskalai has recorded 7.53 thousand tonnes in 2000-01. The production of maskalai increased to 8.03 thousand tonnes in 2005-06 and it has decreased to 7.43 thousand tonnes in 2010-11. The average yield of maskalai was 463 kg per hectare in 2000-01 and increased to 993 kg per hectare in 2010-11.

The area under khesari cultivation has come down from 38.80 thousand hectares in 2000-2001 to 35.32 thousand hectares in 2005-06. Its area again decreased to 19.83 thousand hectares in 2010-11. The production of khesari, which was 4.17 thousand tonnes in 2000-01, 3.29 thousand tonnes in 2005-06 and 2.21 thousand tonnes in 2010-11. The average yield of khesari was 1074 kg per hectare in 2000-01. It has been decreased to 933 kg per hectare in 2005-06 and again increased to 1099 kg per hectare in 2010-11.

The area under gram was 7.10 thousand hectares in 2000-01 and the area under its cultivation decreased to 6.10 thousand hectares in 2005-06. It has declined sharply to 2.30 thousand hectares in 2010-11. The production of gram has recorded 5.20 thousand tonnes in 2000-01. The production of gram decreased to 5.10 thousand tonnes in 2005-06 and it has again decreased to 2.40 thousand tonnes in 2010-11. The average yield of gram was 733 kg per hectare in 2000-01. It has been increased to 847 kg per hectare in 2005-06 and again increased to 1074 kg per hectare in 2010-11. From the Table 3.4, the growth rate of area under gram decreased by 67.61 per cent from 2000-01 to 2010-11. The growth rate of production of gram decreased by 53.85 per cent while yield increased by 46.52 per cent.

The area under rapeseed and mustard was 34.90 thousand hectares in 2000-01, 38.00 thousand hectares in 2005-06 and 30.40 thousand hectares in 2010-11. The production of rapeseed and mustard was 36.70 thousand tonnes in 2000-01 and it has decreased to 41.60 thousand tonnes in 2005-06. In the next quinquennial periods, however, the production increased to 31.80 thousand tonnes in 2010-11. The average yield of rapeseed and mustard was 1051 kg per hectare in 2000-01 and it has increased to 1095 kg per hectare in 2005-06. It has decreased to 1047 kg per hectare in 2010-11.
The area under sugarcane cultivation has come down from 3.60 thousand hectares in 2000-2001 to 2.60 thousand hectares in 2005-06. Its area again decreased to 2.20 thousand hectares in 2010-11. The production of sugarcane was 299.80 thousand tonnes in 2000-01, which was declined to 288.70 thousand tonnes in 2005-06 and again declined 212.00 thousand tonnes in 2010-11. The average yield of sugarcane was 83820 kg per hectare in 2000-01. It has been increased to 113012 kg per hectare in 2005-06 and again decreased to 98925 kg per hectare in 2010-11.

In 2000-01, the area under potato was 2.45 thousand hectares but it rose to 2.50 thousand hectares in 2005-06. It has increased to 5.55 thousand hectares in 2010-11. The production has achieved from 44.50 thousand tonnes in 2000-01 to 38.50 thousand tonnes in 2005-06 to 146.80 thousand tonnes in 2010-11. The average yield of potato was 17838 kg per hectare in 2000-01. It has been decreased to 15243 kg per hectare in 2005-06 and again it increased to 29153 kg per hectare in 2010-11.

The area under jute cultivation has come down from 27.70 thousand hectares in 2000-2001 to 22.20 thousand hectares in 2005-06 18.00 thousand hectares in 2010-11. The production of jute was 370.80 thousand bales in 2000-01, which was declined to 298.10 thousand bales in 2005-06. It also decreased to 255.60 thousand bales in 2010-11. The average yield of jute was 13.40 bales per hectare in 2000-01. It has been increased to 13.50 bales per hectare in 2005-06 and again increased to 14.20 bales per hectare in 2010-11.

The aggregate growth rate of area under jute decreased by 35.02 per cent from 2000-01 to 2010-11. The growth rate of production of jute decreased by 31.07 per cent and the yield of jute increased by 5.97 per cent.

A comparative analysis reveals that the area under rice crop has grown significantly due to spatial diffusion of technology and development in irrigational facility. Although there is no clear trend in case of other crops but they also appear to have grown in terms of area during the last ten years. It is all because of the availability of water for irrigation. After paddy and wheat, oilseeds and pulses are the other most dominant food crops. The area under pulses also appears to have marginal decreased in size.
The index of intensity of cropping in the district was 150 percent in 2000-01, which has increased to 183 percent in 2010-11 which is a sign of healthy agricultural economy. Though for the Malda district the index of intensity of cropping is 183, but there are significant variations across the district. Among the blocks the high cropping intensity found in five blocks namely, Harishchandrapur-I, Harishchandrapur-II, Chanchal-I, Chanchal-II and Kaliachak-I during 2000-01. It is because of favourable irrigation facility, extent of new farm technology, climatic and edaphic condition for cultivation of crops. Ratua-I, Gazole, Bamongola, Habibpur and English Bazar are in the category of low index of cropping intensity.

In 2010-11, all the blocks have shown increasing trend of cropping intensity, except Manikchak and Kaliachak-I block. There are five blocks Harishchandrapur-I, Harishchandrapur-II, Chanchal-I, Chanchal-II, and Ratua-II which have more than 221 percent of cropping intensity index. Gazole, Bamongola, Habibpur, Old Malda and Manikchak have low index of cropping intensity. These blocks inhabited mostly by general and tribal indigenous population who have not taken interest in the development of agriculture.

During the period of 2000-01 the higher level of crop diversification has been found in Ratua-I, Ratua-II, Manikchak, Kaliachak-I, Kaliachak-II and Kaliachak-III. Moderate level of crop diversification has covered Harishchandrapur-I, Chanchal-I, Chanchal-II, Bamongola, Old Malda and English Bazar whereas lower level of crop diversification was in Harishchandrapur-II, Gazole and Habibpur. In 2010-11 the higher level of crop diversification has been registered in Ratua-I, Ratua-II, English Bazar, Manikchak, Kaliachak-I, Kaliachak-II and Kaliachak-III. Blocks under moderate level of crop diversification include only two blocks i.e. Harishchandrapur-I and Chanchal-I. The low level of crop diversification has found in Harishchandrapur-II, Chanchal-II, Gazole, Bamongola, Habibpur and Old Malda.

Crop combination regions were worked out keeping in view the importance of integrated assemblage of various crops grown for planning purposes. It has been observed during the study periods i.e. 2000-2001 and 2010-2011 that crop combination ranges from mono crop to eight crops in the entire Malda district. With the passage of time, and the demand, blocks are approaching towards specialization of crops cultivation. For instance the blocks of Ratua-I having three crop
combination (Rice, Wheat and Jute) during 2000-01. Later on in 2010-11, the block shows two crop combination (Rice and Wheat). Block of Ratua-II was having eight crop combination (Rice followed by Wheat, Jute, R & M, Masur, Khesari, Maskalai and Gram) during 2000-01, its crop combination restricted to seven crop combination (Rice, Wheat, R&M, Jute, Masur, Gram and Maskalai) during 2010-11. The block of Bamongola have two crop combination (Rice and R&M) during 2000-01. Later on in 2010-11, it shows monoculture (Rice). Kaliachak-I block having five crop combination (Rice, Wheat, Maskalai, R&M and Jute) during 2000-01. During 2010-11, the block shows four crop combination (Wheat, Rice, Jute and R&M). Block of Kaliachak-III shows eight crop combination (Wheat is the dominant crop, followed by Rice, Gram, Maskalai, Jute, Masur, R&M and Khesari during 2000-01, later on in 2010-11, the block having only four crop combination (Rice, R&M, Maskalai and Jute).

Technological and institutional factors are strong inputs for the better productivity of land because their use increases the farm efficiency, saves time and minimize production cost. The type of machinery is changing fast; the older ones are replaced by the better performing the newer ones leading to further increase farm efficiency and farm output. It is therefore better to examine the position of farm machinery in different periods of time for assessing the nature of agricultural development in the study region. The agricultural machinery used for agricultural purposes in Malda relates to tractor, power tiller, pumpset, thresher, laveller and sprayer or duster. The use of these modern agricultural implements has increased during the last decades. Therefore, the number of these implements per 10,000 hectares of gross cropped area has also been increased.

The average number of tractor was 54.17 per ten thousand hectares of gross cropped area in 2000-01, which has increased to 59.28 per ten thousand hectares of gross cropped area in 2010-11. The number of tractors increased in almost all the blocks of Malda (with few exceptions) during the period of study. The number of power tiller also increased from 74.46 to 99.64 per ten thousand hectares of gross cropped area during 2000-01 to 2010-11. The number of pumpset has increased due to uncertainty of rainfall. In same way the number of sprayer has increased because use of pesticides increased for high production of crops.
The farmers have gradually become aware of the benefit of fertilizer application and has therefore progressively increased its per hectare consumption of fertilizer in the region. The actual quantity of fertilizers applied in 2000-01 was 43.30 kg per hectare but it rose up to 99.10 kg per hectare in 2010-11.

At present various types of tube wells are the major source of irrigation in the study area but there are a lot of variations at block level. Shallow tube well is the major sources of irrigation of the study area. The farmers have been tempted to switch over from traditional to modern agricultural especially in those blocks where irrigational facility has improved. The pace of change is slow but it has been set into motion. In the view of rising cost of chemical fertilizers and the large amount of subsidies given to farmers, it is felt that natural waste and by products of crops could be a good source of organic matter to increase the fertility of soil. Waste products include animal dung, bagasse, weeds, straw, sewage, sludge, rice husks and seed weeds. The composition and recycling of these waste products would provide cheap and ideal organic manure to the soil. Bio fertilizers are considered as an effective, cheap and renewable supplement to the chemical fertilizers. Rhizobium has been found to be effective for pulses and pulses.

The total number of agricultural labourers is increasing and the percentage of agricultural labourers to the total workers is also increasing during the periods in Malda district. Table 4.9 illustrates that the number of agricultural labourers was 246420 in the year 2001 in the region but it raised up to 322151 in 2011. The share of agricultural workers to the total workers was 19.40 per cent in 2001, but it increased to 22.42 per cent agricultural labourers in 2011. The percentage of literates to total population in the district has gone up from 50.28 percent in 2001 to 61.73 percent in 2011. The share of co-operative societies to the ten thousand populations was 1.90 per cent in 2001, and it decreased to 1.13 per cent co-operative societies in 2011. It is clear that the percentage of co-operative societies and their percentage to ten thousand populations are decreasing almost in every block (except Bamongola block) of the district during 2001 to 2011 Census year.

To delineate the general pattern of productivity and demarcate high, medium and low productivity regions a composite yield index computed for fifteen blocks of Malda district in 2000-2001 and 2010-2011 respectively. It is quite clear that during
the last decade, high productivity area under cereals has recorded a significant increase i.e. 3450 hectares, while medium and low productivity area suffered with a great loss by 27770 hectares and 35038 hectares respectively. The increase in terms of percentage was 2.57 per cent for high productivity, and decrease in terms of percentage was 60.66 per cent for medium productivity and 99.08 per cent for low productivity. Thus the area under high, medium and low productivity of cereals on the whole shows a mixture of positive as well as negative sign. On the whole, the productivity area under cereals has declined by 59358 hectares (27.55 per cent), while the productivity area under pulses also decreased by 18119 hectares (112.05 per cent). The productivity area under oilseeds and cash crops has shown significant increase by 4176 hectares (13.61 per cent) and 3385 hectares (14.68 per cent) respectively. The overall productivity is also decreased by 85038 hectares (29.80 per cent). It may be seen from the analysis that farmers are highly inclined towards the cultivation of oilseeds and cash crops rather than cereals and pulses, because these crops give maximum returns to the farmers. Agricultural performance in the district is characterized with marked productivity variations. Among small and marginal farmers, agricultural productivity is hampered by poor logistical support and weak infrastructure. These variations in productivity are influenced by the physical and socio-economic factors.

The factor analysis of the variables for the year 2000-2001 indicates that 75.18 percent of the total variance is explained by three factors. Factor 1 explains 28.44 percent of the total variance. The positive signs of the variables are associated with the higher development of agriculture. The positive signs of the variables are associated with the higher development of agriculture. The variables which have the positive loading more than 0.500 are agricultural productivity (0.816), net sown area (0.811), fertilizer depot (0.645), electrified mouza (0.612) and co-operative societies (0.513). The variables which have negative loading more than -0.500 is only cropping intensity (-0.819).

Factor 2 accounts for 17.30 per cent of the total variance explained. The variables which have the positive loadings of more than 0.500 are pumpset (0.962), shallow tube well (0.936) and area under foodgrain (0.586). The variables which have negative loading more than -0.500 is co-operative societies (-0.526).
Factor 3 accounts for 12.33 per cent of the total variance explained. It is strongly loaded on large number of the variables but the variables which are having the loadings more than 0.550 are cultivators (0.842), agricultural labourer (0.547), electrified mouza (0.634) and fertilizer depot (0.566). The variables which have negative loading more than -0.500 are sprayer (-0.709) and tractor (-0.692).

The value of 22 variables have been computed for fifteen blocks for the year 2010-2011, resulting in 22×15 data matrix for the study region. This data matrix collapsed into each other leads to three factor of agricultural development. It shows that in all 74.87 percent of the total variance is explained by three factors. Factor 1 explains 28.45 per cent of the total variance. The variables which have the positive loading more than 0.500 are net sown area (0.962), electrified mouza (0.719), fertilizer depot (0.538) and primary school (0.521). The variables which have the negative loading more than -0.500 are cropping intensity (-0.950), agricultural labourer (-0.652).

Factor 2 explains for 21.18 per cent of the total variance is composed of three variables of high positive loading of more than 0.500. These variables are tractors (0.917), sprayer (0.835) and deep tube well (0.527). Only three variables i.e. area under food grain (-0.720), cultivators (-0.599) and electrified mouza (-0.526) has negative loading i.e. more than -0.500. Factor 3 accounts for 13.47 per cent of the total variance explained. Only two variables i.e. shallow tube well (0.967), pumpset (0.963) has positive loading more than 0.500. Only one variable which have the negative loading more than -0.500 is road length (-0.702).

Correlation matrix has been used to see the relationship between variables of agricultural development. During 2000-01, it is seen that agricultural productivity is significantly positively correlated with variables of fertilizer depot, seed store and pumpset whereas during 2011-12, it is significantly positively correlated with sources of fertilizer depot, cultivator and irrigation. Literacy is positively correlated with advance agricultural techniques.

For determining the spatial pattern and level of agricultural development, 22 variables have been selected which may be considered as the important variables of agricultural development. To determine the overall spatial pattern and the level of
agricultural development, the data related to the 22 variables were transformed and combined using Z-score technique, and the development districts were classified into three development levels on the basis of their composite score. There is a spatial and temporal variation in the level of Agricultural Development in Malda district during the study period. Based on composite Z-score, it has been divided into high, medium and low level of agricultural development for the two periods, i.e. 2000-2001 and 2010-2011. It has been observed that even after a lapse of ten years, there is slight change in the spatial pattern of high medium and low levels of agricultural development.

During 2000-01, high level of agricultural development lies in north-central and eastern part of the region. They include the blocks of Chanchal-I (+0.364), Ratua-II (+0.384), Gazole (0.240), Bamongola (+0.222) and Habibpur (+0.199). The medium level of agricultural development occupies the blocks of Harishchandrapur-I (+0.072), Harishchandrapur-II (+0.046), Ratua-I (+0.107) in the northern part, Old Malda (-0.091) and English Bazar (+0.077) in south-central part of the study region. The low level of agricultural development lies in the north, south-eastern, western and southern part of the region. They include the blocks of Chanchal-II (-0.363), Manikchak (-0.529), Kaliachak-I (-0.181), Kaliachak-II (-0.241) and Kaliachak-III (-0.189).

During 2010-11, high level of agricultural development i.e. (> +0.13) lies in northern, eastern part of the study region. They include the blocks of Chanchal-I (+0.179), Ratua-II (+0.182), Gazole (+0.216), Bamongola (+0.470) and Habibpur (+0.311). The medium level of agricultural development i.e. (+0.13 to -0.13) was recorded in the blocks of Harishchandrapur-I (-0.014), Harishchandrapur-II (0.046), Chanchal-II (-0.038), Ratua-I (-0.106) in the northern, and Old Malda (-0.029) in the south-eastern part of the study region. The low level of agricultural development lies in the central, western and southern part of the region. They includes the blocks of English Bazar (-0.517), Manikchak (-0.221), Kaliachak-I (-0.170) and Kaliachak-III (-0.437). The farmers belonging to the blocks of high level of agricultural development having the facilities of large share of net sown area, high irrigation and cropping intensity, high productivity, fertile soil and better agricultural technology, while in the low levels of agricultural development, the impact of these variables are comparatively low. To earn more returns, the farmers of this region adopted the cultivation of horticulture rather than crop production.
Conclusion and Suggestions

The blocks witnessed a slight improvement in the levels of agricultural development in the blocks during the last decade i.e. 2000-01 to 2010-11. The study reveals that there were only five blocks namely Chanchal-I, Ratua-II, Gazole, Bamongola and Habibpur have high level of agricultural development in both the study period. Only Kaliachak-II block emerged with high levels of agricultural development in from 2000-01 to 2010-11. It may be attributed to interplay of combination of factors which include improvement and rise in irrigational facilities, cropping intensity, share of net sown area, application of modern technological inputs etc.

However, Manikchak, Kaliachak-I and Kaliachak-III continued to be agriculturally less developed blocks in the study period i.e. 2000-01 to 2010-11. Low irrigation and cropping intensity, small share of net sown area, less application of modern agricultural inputs and very low level of agricultural yield have been major determinants resulting into low levels of agricultural development in these blocks.

Agriculture is the prime source of income for the rural people of Malda district. Nearly 75 percent people are engaged in agricultural activities. The socio-economic condition of the people depends on agriculture. Agricultural practices in Malda district is age sensitive, as younger generation is coming up and actively participating in the decision making process of the household affairs. Funding of agriculture in the rural areas where the bulk of the farmers live have also brought a lacuna in accelerating socio-economic development via agriculture. The blocks of Gazole, Bamongola and Habibpur (lies in eastern part of the district) have high level of agricultural development as well as high level of socio-economic development during both the year.

Socio-economic conditions reflect the quality of life of the society as a whole as well as that of its constituents. The major components of socio-economic life of the people in any society are the level of per capita income, income pattern, consumption and saving pattern, housing conditions, level of literacy, attitude towards marriage, sex ratio and position of women.

It has been observed that rural people have high ambitions and aspirations regarding not only for the education of their children but also for their jobs. There have been considerable changes in various social parameters in the study region.
Conclusion and Suggestions

Among various social parameters changing attitude of the respondents towards education, marriage, family planning, political awareness and involvement has been considered. It is also found that the respondents are also concerned about the preference of schools for their children but there is a lot of variation at spatial level. The attitude towards various aspects of marriage such as child marriage, widow marriage and inter caste marriage has undergone a major change. Various ritual of marriage have not only changed but have become more simple and modernised. They are becoming more liberal and more receptive to modern ideologies.

Religion is a very important social indicator which provides a very strong bond of social fabric among the masses. But with the increase in the level of education, the attitude towards religion is changing. The people are becoming more liberal, less superstitious and less orthodox. They are now more receptive to new ideas and practices. Per capita income is a very good indicator for the assessment of economic status of the respondent but it is very difficult to workout per capita income.

Younger generation accounting about 41 percent of the total respondents has also high level of socio-economic transformation. The composite index in case of younger people is 3.18, whereas it is only 1.63 for older people. Hence, it may safely be inferred that level and rate of socio-economic transformation is more among younger generation than the older ones.

An attempt has also been made to work out the composite index of socio-economic transformation of economically well of and poor respondents 27 percent and 73 percent of the total respondent respectively. The composite of the former ones is 3.84, while it is 1.97 in case of later. Hence, it proves that the level and rate of socio-economic transformation is more among economically well of respondents as compared to poor ones.

Another difference in the level of socio-economic transformation is found at the differential level of education. The results show that the educated respondents which account 44 percent of the total respondents have a composite index of 4.01, while corresponding figure is 1.93 in case of illiterate respondents. It also proves that level and rate of socio-economic transformation is more among educated people as compared to illiterate people.
Conclusion and Suggestions

It is quite interesting that those villages (Chaksundar, Adatala and Rishipur) which recorded high level of agricultural development also have high level of socio-economic transformation. The villages which have recorded low level of agricultural development as well as low level of socio-economic transformation are Barui and Talbha Kuria during both the study period. The relationship between agriculture and socio-economic transformation reveals that the village where agricultural development is high, socio-economic transformation is also high and vice versa. It means that there is integrated development between agriculture and socio-economic transformation. Therefore, it is proved that agricultural development has a great impact on the socio-economic transformation in the villages of the Malda district.

Suggestions:

On the basis of information and addressed issues related to agriculture development and its impact on socio-economic transformation, some suggestions have been proposed to develop the agricultural scenario and to reduce regional variation in the study area.

- Agriculture is the source of livelihood in the study area but it is badly affected by the occurrence of flood in almost each and every year in some selected blocks such as Kaliachak-II, Kaliachak-III, Harishchandrapur-I, Harishchandrapur-II, Manikchak. Therefore, it is essential to control flood by establishing concrete along the river banks to protect crops.

- The rate of unemployment is very high in the study area. Therefore, employment opportunities should be provided to the people firstly by establishing small scale agro based industries and secondly by infrastructural and rural development schemes. It is also very important to reduce the seasonal migration of the people to other district or state for the development of agriculture.

- There is a high concentration of scheduled caste and backward class households in the study area. Therefore, special employment and education programme should be introduced in order to raise their social and economic status.
Around 39 percent people are illiterate in the study area, while the gender gap between male and female is also high (roughly 11 percent). Therefore, there is a need to increase the literacy rate through introducing various programmes and policies. Because education is the best policy to eradicate poverty.

Modern technology requires adequate knowledge. It is remarked that farmers are ignorant of agricultural techniques and poor in skill. Therefore, training should be provided for farmers to increase the productivity.

It has been observed at a micro level that yield of crop is not increasing in those areas where same crop is continuous practicing. It is essential requirement of crop diversification in such areas for improving crop yield.

It is clear after the field survey that about sixty percent farmers belong to small and marginal farmers. Therefore, they are the backbone of economy. These farmers do not possess adequate means to improve their method of cultivation. Therefore, policies should be made for small and marginal farmers.

Income obtained from cash crops is likely to be reinvested in the agriculture of these regions in the form of modernized inputs like fertilizers, pesticides, agricultural implements and tube-wells. This will result in increasing agricultural productivity in these regions.

During the survey it was found that yield of crops, except rice in few pockets is low. Traditional methods of farming, limited irrigation facilities, low agricultural mechanization, limited use of HYV of seeds and fertilizers due to poverty and small size of holdings, poor connectivity of villages to the urban centres, huge dependency on agriculture, poor marketing facilities and complete lack of industrial development are some of the factors responsible for low level of agriculture and socio-economic development. During the survey it was found that the workforce has nothing to do as they spend day and night, weeks and months without employment. Most of the people get employment at the time of sowing and harvesting crops in different agricultural seasons.
Most persons are unaware of the legal entitlement of the Act. For instance, the Act mandates that any individual holding a job card can apply for work and will be provided an employment within 15 days with the submission of submitting application. If the applicant does not get work, he or she is entitled to unemployment allowance. It was noticed that in most of the villages not a single job application was received.

The practice of chemical fertilizers is losing soil fertility. Bio-fertilizers should be used instead of chemical fertilizers. Bio-fertilizers are considered as an effective, cheap and renewable supplement to chemical fertilizers. Farmyard manures like animal dung, bagasse, weeds, straw, sewage, sludge, oil cakes, vegetables processing waste, rice husks and seeds weeds can be a good source of organic matter to increase the fertility of soil by composting and recycling of these waste products. Green manure crops help in making the soil fertile. Green leguminous crops, like dhaincha, barseem and pulses, when they attain some height, are ploughed in the field along with their roots, stems and leaves. This helps all the nutrients obtained from the soil to go back to the soil.

Inadequate electricity supply is major problem for running tube-wells. Therefore, supply of electricity should be adequate at the time of crop irrigation.

The only way to convince farmers is that technologies should be applied practically in front of them and let them see with their eyes how much more benefits and profits they can get in such application. For conducting practical demonstration, suggestion is that government takes some land from farmers on rent and applies new techniques on these lands.

It is observed that farmers face critical problem for storing to their crops. In absence of storing, they dump their crops in market at very low price. Sometimes, crops like wheat and potato spoil in the field. Therefore, small cold storages or granaries should be opened at village level especially in the southern and north-western part of the district. Hence, it eliminates dumping of excess crops in the market yard.
Encouraging the small and marginal farmers including backward castes to maintain the increased production tempo by providing different inputs on subsidy at reasonable price.

During field survey, it is noticed that farmers are not aware about credit system. Illiteracy and ignorance are major hindrance before the farmers to familiar with the regulation of banks. Therefore, monetary support, loan facilities and insurance policies should be provided to all size of land holdings without hindrance and rules should be liberalized. Zero percent interest loans should be made available for poor farmers.

It is seen that the villages of Barui, Talba Kuria, Gayesbari, Panchanandapur and Suzapur Mandai show low level of agricultural development. These block requires special attention for development.