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CROP DIVERSIFICATION UNDER MARKET REFORMS. THE CASE OF WEST-BENGAL

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Abstract: The issue of crop diversification is most vital in the market reforms. Since, currently farming is not up to subsistence level as before new agricultural strategy but commercial enterprises. This study is based on primary field survey in different crop regions in West-Bengal. For a better study, the study area is divided between developed, less developed and common samples. The study is classified according to acreage analysis and economic class analysis. Thus according to acreage analysis it is clearly revealed that higher acreage group in developed samples cultivates (winter) rabi crop in large area than higher acreage group in less developed samples. On the other hand, the higher acreage group in less developed samples cultivates kharif (summer) crop in large area. Regarding Economic class analysis, similar picture arises on the issue of sown area of different crops that the self employed middle peasants owned major portion of sown area in common samples, developed samples, and less developed samples. Crop diversification is greater among higher economic class.

Keyword: Crop diversification, Economic class, Acreage group, Samples.

INTRODUCTION:

The issue of crop diversification is most vital in the market oriented reforms. Since, currently farming is not up to subsistence level as before new agricultural strategy but commercial enterprises. Crop diversification is projected to give a wider choice in the production of a variety of crops in a given area so as to expand production related activities on various crops and also to lessen risk. Crop diversification in India is generally viewed as a shift from traditionally grown less remunerative crops to more remunerative crops. The crop shift (diversification) also takes place due to governmental policies and thrust on some crops over a given time. Market infrastructure development and certain other price related supports also induce crop shift. Crop diversification and also the growing of large number of crops are practiced in rain fed lands to reduce the risk factor of crop failures due to drought or less rains. Crop substitution and shift are also taking place in the areas with distinct soil problems. For example, the growing of rice in high water table areas replacing mustard and pulses. Area shifts and crop pattern changes can lead either to crop specialization or to crop diversification.

During the market oriented reforms, farmers are optimistic to divert from food grains to commercial crops production. In order to produce these remunerative crops the farmers needed more support in terms of credit and other forms of subsidy. But in reality the fertilizer subsidies was withdrawn to a great extent and the cost of production increased. The supply of credit to agriculture, particularly the concessional credit in fact declined. But at the same time, selling prices of grain declined due to government withdrawal from the public purchase and distribution of

grains. Against this background, this study is based on primary field survey in different crop regions i.e. Bardhaman, Hooghly, Birbhum and Murshidabad in West Bengal. This study would like to throw interesting light on this smouldering issue of Crop Diversification. The study would reveal the pace of crop diversification and agricultural production in the market oriented reforms under class differentiation in rural West-Bengal. Initially, This study depicts the pace of crop diversification in the survey area. Secondly, whether class differentiation is taking place in a different pace in the survey area.

There are various research works on the issue of crop diversification in India. In West-Bengal also like most other states the crop diversification is underway under market oriented reforms. The cropping pattern in the state is changing steadily. Our survey data and Economic Review data of Government of West-Bengal validated this point. Area under vegetables and oilseeds have increased significantly in recent years (Economic Review 2011-12, Department of Statistics and Programme Implementation, GOWB). Since 2004-05 the area, yield rate and production of oilseeds, pulses have gone up steadily. While the yield rate of total oilseeds in the state increased from 828 kg/hectare in 2008-09 to 1048 kg/hectare in 2010-11, that at all India level increased from 1006 kg/hectare in 2008-09 to 1159 kg/hectare in 2010-11 (advanced estimate) (Economic Review 2011-12, Department of Statistics and Programme Implementation, GOWB). Some have studied about the issue of crop diversification in West Bengal (De 2003, Ghosh and Kuri 2005, Majumdar and Basu 2005, Sanyal et al. 1998 and Sharma 2005). There are some studied which stressed that to enhance the growth rate of agriculture in the state, the

cropping pattern of the state needs to be diversified towards the high value crops (Majumdar and Basu 2005). The cropping pattern in most of the districts has noticeably changed in favour of high value non-food grain crops such as potato, oilseeds and other non-food grain rabi crops. They have stressed that the ill-defined land rights and lack of accessibility to institutional credit were the main reasons for the sluggish growth of private investment in agriculture in the first three decades of post-independence period. In addition to that small farm's cropping pattern was no longer confined to labour intensive crops alone; rather it tended to change in response to market forces (sanyal et al., 1998).

Some studied found that during the period 1972 to 1983 in West Bengal, paddy and total oilseeds are the two crops which gained area allocation under gross cropped area GCA and there have been declined in area allocation under total pulses both in absolute and relative terms. Area under paddy and wheat has continually increased in many states including West Bengal at cost of coarse cereals, millets, pulses and cotton. Technological support, price support and infrastructural support (which includes markets and irrigation, subsistence requirements, lesser price, yield risks etc.) are the main reasons for paddy and wheat dominated cropping pattern in the country (Mruthyunjaya and kumar 1989).

It is clearly pointed out that there is an increasing extent of crop diversification since market oriented reforms. The area under fruits and vegetables recorded a substantial increase during the period 1997-98 to 2004-05 (Sau and Pathak 2007).

The extent of crop diversification in different districts of West Bengal and found that there is a large scale discrepancies in diversification across districts over time, depending on the growth of utilisation of improved agricultural technology (De 2000).

The rate of growth of acreage of different crops both in absolute and relative terms in time perspective and discussed at length the nature of crop diversification in West Bengal. He depicted that the cropping pattern in West Bengal in terms of allocation of acreage, remained skewed towards boro paddy, potato and mustard. In addition to, the district-wise pattern of changes in acreage of various crops varied over time and was divergent (De 2003).

Thus, the issue of crop diversification has become very crucial in the agriculture of West Bengal under market oriented reforms when the growth rate of total agricultural output as well as the production growth rates of major important crops have started declining. The main reason of slowing down the output growth rates of major crops was the falling yield growth rates as the area expansion is hardly possible in West Bengal. The vital basis of increasing total agricultural output is the favourable change in the crop mix of the agricultural sector in the State. The crop diversification of the state can go a long way to counter the decelerating trends in west Bengal. More specifically, a shift in the crop diversification towards the high value crops can become a useful solution of slowing down the pace of agricultural growth in the state (De 2003, Sharma 2005). During the post green revolution period (particularly after 1970's) cropping pattern in West Bengal has changed in high remunerative

crops at the cost of lower value crops (Bhalla and Singh 1997, De 2002). In some study it is found that during the period 1970-71 to 1994-95, the area and production of boro rice, potato and mustard have increased rapidly and the development of irrigation and technology in other fields are the main factor behind the relatively rapid expansion of cultivation of the above mentioned crops from which they can derive maximum possible net revenue at least possible risk, if there is no dearth of essential factors of cultivation of those crops (De 2003).

Some of the studies examined that a massive crop diversification has taken place in the countryside due to changes in the relative prices of the agricultural commodities (Narain 1965, Nayyar and Sen 1994, Vyas 1996).

Some have projected that during the current decades, the process of crop diversification has been widespread due to the combined effects of water-seed-fertiliser technology as well as some infrastructural development such as market centres, roads, transport etc, in the countryside (Vyas 1996, Bhalla and Singh 1997).

It is observed that there have been inter-district variations in the level, extent of diversification and also the process of crop diversification keep pace after 1987-1988 all over the state (Sharma 2005).

Since the introduction of new agricultural technology particularly water seed fertiliser technology, a significant change in land allocation towards some high value cash crops such as fruits and vegetables cultivated particularly by the small farmers is examined in India (Joshi et.al., 2006).

The study focuses on the changes that have taken place in the overall agrarian scenario of West Bengal over the period 1980-81 to 2004-05. Agricultural diversification as a neoliberal strategy to shift the dynamics of crop pattern and crop orientation, seems to have gained huge significance since early 1990s. West Bengal having distinct physiogeographic zones, constitutes a suitable region for the growth of diversified crops. The changing market conditions in the wake of economic liberalization have provided new incentives to farmers to go for crop experimentation and changes in area allocation. However, an analysis of area, production and yield of different crops over the period (in terms of growth and instability) suggests that shifts in area from food crops to non-food crops have been slow, with growth rates declining on the whole in the post-liberalization period, with definite exceptions in the case of certain non-food crops. Diversification achieved in the state is largely at the cost of growing inter-district and interregional disparities. The overall stabilizing effect of the growth resurgence in West Bengal's agriculture during the 1980s has reached a saturation point. The study points to a number of constraints to diversification including technological backwardness, poor infrastructure, non-remunerative marketing channels and sluggish growth of input-delivery system

METHODOLOGY

This study covered four districts of West-Bengal and was carried out by the author in different time periods from July 2010 to March 2011. The districts were selected

purposively. The following districts were Birbhum, Burdwan, Hooghly, Murshidabad. The districts have distinct development indices and different cropping patterns. Birbhum for paddy, Burdwan for paddy, mustard and potato, Hooghly for paddy, potato and mustard, Murshidabad for paddy and jute. After selecting the district, villages were selected according to different development indices. For example, percentage area irrigated, percentage of literates etc from four district village directory of Census 2001, as representative of developed samples and less developed samples. The villages which have low percentage of development indices are referred to as less developed samples whereas the villages which have high percentage of development indices are referred to as developed samples. Finally the combination of developed and less developed samples are known as common samples. After this, this study utilised these samples to study the sample household according to acreage and Patnaik's labour exploitation criterion. For a better study, villages were identified as developed and less developed from the village level disaggregated data of Census-2001. The study have selected the household randomly (SRSWOR). The total number of households was 221.

This study have used the NSSO definition to identify farmer and farmer household, Any person who possessed some land and was engaged in agricultural activities on any part of that land during the reference year was accepted as a farmer and any household which had at least one farmer member was accepted as a farmer household.

This study have used Patnaik's E criterion. Side by side the standard classification used by the Government of India's National Sample Survey Office (NSSO) that is acreage-group analysis for classification of peasants.

The farm-size grouping is self-explanatory. Five categories of households were constructed:

1. No land operated; that is, landless households.
2. Some land operated, but less than 2.5 acres.
3. Operated land in excess of 2.5 acres but less than or equal to 5 acres.
4. Operated land in excess of 5 acres but less than or equal to 10 acres.
5. Operated land in excess of 10 acres as (Above 10 acres groups).

The survey data on the distribution of the (i) assets (land and non-land), (ii) outputs (iii) surplus/deficit (iv) value-added. There are significant differences between the results obtained from the two types of grouping.

A complete list of households belonging to different occupational groups is available from the village papers lying at local panchayat office. Among all rural households belonging to different occupational groups, we have taken only the household belonging to the cultivator category. From this category of households, simple random sample is drawn without replacement. We have used MS excel, access for analysing the data.

CROPPING PATTERN OF THE SURVEY AREA:

This study observed that the farmers are cultivated different crops in four districts. Aman paddy, Boro paddy, Mustard, Wheat, Til, Potato, Vegetables, Jute, Groundnut, Pulses. The season for kharif crops is approximately from June to October whereas the season for rabi crops is approximately from October to March. Aman paddy is cultivated by the farmers during monsoon, The cultivation time for Boro paddy starts in winter season and ends in summer season. Boro paddy is highly productive and highly remunerative. It requires a lot of water under controlled irrigation. The crop matures within 75 days and is grown in spring when the flood water resides. Potato and Mustard is cultivated after aman paddy cultivation is over. Among Aman and Boro paddy, Boro paddy uses 100% of HYV seeds followed by Aman. The season for Rabi crops is approximately from October to April. There are variety of crops which includes Wheat, Mustard, Til, Potato and some vegetables. Potato in Burdwan, vegetables, Potato and jute in Hooghly, vegetables in Birbhum, vegetables and jute in Murshidabad is found to be highly remunerative and commercial. They are grown by more or less all the households of whichever economic classes it belongs are involved in the production of these crops in our survey region. Til is sown as the fourth crop in a season after harvesting of Rabi crops.

CROPS

The following crops are depicted according to their importance in the survey area. aman paddy, boro paddy, mustard, wheat, til, potato, vegetables, jute, groundnut and pulses. The importance of the crops are depicted according to the percentages of the total sown area. Table: 4.1 displayed the percentage of area sown for different crops in developed, less developed and common samples. Table: 4.2A shows class wise percentage distribution of sown area in different crops for common samples. Table: 4.2B shows acreage wise percentage distribution of sown area in different crops for common samples. Table: 4.2C shows class wise and acreage wise percentage distribution of sown area in different crops for developed samples. Table: 4.2D shows class wise and acreage wise percentage distribution of sown area in different crops for less developed samples.

ANALYSIS OF THE SURVEY FINDINGS

Now regarding the analysis, In common samples, it is observed that aman paddy is cultivated in the majority of the survey area. Secondly, boro paddy, next potato and wheat. Other crops are more or less of equal importance. In developed samples, the study observed a major emphasis on remunerative crops. The commercially viable crops like boro paddy and pulses are being given more emphasis. With increasing commercialisation, some signs of crop diversification are observed in the developed sample area. Notably among them are til cultivation. These crops are replacing the boro paddy cultivation due to its fall in profitability in the free market regime according to the view of local farmers. From Table: 4.2C this study observed that crop diversification is more pronounced in developed samples among self employed and labour hiring classes like

middle peasant and rich peasant classes, except pulses all of the crop types are cultivated by rich peasant. However, Middle peasant cultivated all crops without leaving any of them.

The pattern of crop diversification in developed samples is somewhat different than less developed samples. This study observed that farmers in developed samples cultivated pulses (remunerative crops), and not cultivated groundnut due to less remunerative. Farmers in developed samples cultivated less vegetables compared to less developed samples. Farmers in less developed samples are cultivating vegetables and groundnut since these crops needed very less water. Farmers of this area have been cultivating these crops for many years. Farmers cultivate these crops due to increase in marketability and greater return in a short duration.

In the cases of all classes taken together, the total land devoted to aman paddy is very high, next to which is boro paddy, potato which is used for commercial purpose. Regarding the rich peasant and middle peasant class we observed a considerable amount of land being used for the purpose of wheat, potato and jute. For other classes this pattern is not so visible in the survey area. This clearly reveals that crop diversification is more visible among the exploiting classes and the self employed classes.

So, crop diversification is much more distinct in developed samples than less developed samples. Regarding economic classes, we find that exploiting and self employed classes are the active participants. Whether this is the result of free market regime can be concluded only if time series trend are analysed. In our cross-section analysis this study cannot conclude on this issue. However, local farmers have made such claims ardently.

In common samples, percentage distribution of sown area according to acreage analysis reveals that 2-5 acre groups owned 19.69% of sown area for aman paddy, 7.87% for boro paddy, 1.27% for mustard, 2.69% for wheat, 2.81% potato, 0.05% vegetables, 1.82% jute and 1.05% for til. In developed samples, percentage distribution of sown area depicts that 2-5 acre groups owned 16.71% of sown area for aman paddy, 11.95% for boro paddy, 1.60% for mustard, 2.89% for wheat, 2.84% potato, 0.13% vegetables, 1.69% jute and 0.88% for til. In less developed sample area, percentage distribution of sown area depicts that 2-5 acre groups owned 21.35% of sown area for aman paddy, 5.61% for boro paddy, 1.08% for mustard, 2.58% for wheat, 2.79% potato, 1.88% jute and 1.14% for til.

On the other hand, percentage distribution of sown area in common samples according to acreage analysis reveals that 0.01-1.25 acre groups owned 9.30% of sown area for aman paddy, 2.34% for boro paddy, 0.72% for mustard, 1.03% for wheat, 2.55% potato, 0.12% vegetables, 0.86% jute and 0.59% for til. In developed samples, percentage distribution of sown area depicts that 0.01-1.25 acre groups owned 7.89% of sown area for aman paddy, 5.47% for boro paddy, 0.47% for mustard, 0.32% for wheat, 2.25% potato, 0.59% jute and 0.66% for til. In less developed samples, percentage distribution of sown area depicts that 0.01-1.25 acre groups owned 10.09% of sown area for aman paddy, 0.61% for boro paddy, 0.86% for mustard, 1.42% for wheat,

2.72% potato, 0.19% vegetables, 1.01% jute and 0.55% for til. This clearly states that crop diversification is greater among the higher acreage groups.

Thus according to acreage analysis it is clearly reveals that higher acreage group in developed sample area cultivates (winter) rabi crop in large area than higher acreage group in less developed samples. On the other hand, the higher acreage group in less developed samples cultivates kharif (summer) crop in large area. This might be due to increased area of irrigated land in developed samples whereas less developed samples depends more on monsoon as there is lack of irrigated land.

Regarding Economic class analysis, similar picture arises on the issue of sown area of different crops that the self employed middle peasants owned major portion of sown area in common samples, developed samples, and less developed samples. For example, In common samples middle peasant owned 23.59% of sown area for aman paddy, 9.43% for boro paddy, 1.77% for mustard, 3.54% for wheat, 4.47% potato, 0.15% vegetables, 3.20% jute and 2.31% for til. In developed samples middle peasant owned 21.26% of sown area for aman paddy, 14.85% for boro paddy, 1.05% for mustard, 4.04% for wheat, 3.90% potato, 5.24% jute and 3.16% for til. Whereas in less developed samples middle peasant owned 24.90% of sown area for aman paddy, 6.42% for boro paddy, 2.17% for mustard, 3.27% for wheat, 4.78% potato, 0.24% vegetables, 2.08% jute and 1.84% for til.

In common samples poor peasant owned 1.81% of sown area for aman paddy, 0.35% for boro paddy, 0.13% for mustard, 0.50% for wheat, and 0.03% potato. In developed sample area poor peasant owned 2.34% of sown area for aman paddy, 0.97% for boro paddy, 0.14% for mustard, 0.07% for wheat, and 0.09% potato. Whereas in less developed samples poor peasant owned 1.51% of sown area for aman paddy, 0.12% for mustard, and 0.74% for wheat. The probable reason is explained earlier in acreage analysis. Thus it is clear that crop diversification is greater among higher economic classes.

TABLE: 4.1

CROPS PER CENTAGE AREA SOWN BY DIFFERENT REGIONS										
CROP	AMAN	BORO	MUSTARD	WHEAT	TIL	POTATO	VEGETABLES	JUTE	GROUNDNUT	PULSES
COMMON SAMPLES	51.51	18.80	1.80	1.40	1.11	0.15	0.11	3.20	0.06	0.11
TOTAL										
DEVELOPED SAMPLES	44.41	18.81	1.80	1.16	1.11	0.11	0.11	5.24	0.00	0.11
LESS DEVELOPED SAMPLES	51.00	11.06	1.86	0.61	1.14	0.64	0.11	1.80	0.11	0.00

TABLE: 4.2 A

COMMON SAMPLES										
CLASSWISE PERCENTAGE DISTRIBUTION OF SOWN AREA IN DIFFERENT CROPS										
CROPS--	AMAN	BORO	MUSTARD	WHEAT	TIL	POTATO	VEGETABLES	JUTE	GROUND NUT	PULSES
ECONOMIC CLASS										
LANDLESS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POOR	12.1	0.26	0.13	0.50	0.00	0.03	0.00	0.00	0.00	0.00
SMALL	22.1	1.51	0.21	0.52	0.22	0.63	0.00	0.32	0.00	0.00
MIDDLE	23.29	5.0	1.37	2.54	2.31	4.47	0.15	3.20	0.0	0.21
RICH	23.36	6.76	0.22	2.92	0.74	4.23	0.07	2.82	0.06	0.00

TABLE: 4.2 B

COMMON SAMPLES										
ACREAGE WISE PERCENTAGE DISTRIBUTION OF SOWN AREA IN DIFFERENT CROPS										
CROPS--	AMAN	BORO	MUSTARD	WHEAT	TIL	POTATO	VEGETABLES	JUTE	GROUND NUT	PULSES
SIZE										
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01-1.25	9.30	2.34	0.72	1.03	0.58	2.55	0.12	0.36	0.00	0.00
1.25-2.5	13.71	6.02	0.57	1.76	0.89	3.02	0.05	1.55	0.00	0.00
2.5-5.0	19.69	7.97	1.27	2.69	1.05	3.81	0.05	1.82	0.00	0.00
5.0-10.0	24.95	1.25	0.82	2.81	0.74	4.00	0.00	1.48	0.00	0.21

TABLE: 4.2 C

DEVELOPED SAMPLES										
CLASSWISE PERCENTAGE DISTRIBUTION OF SOWN AREA IN DIFFERENT CROPS										
CROPS--	AMAN	BORO	MUSTARD	WHEAT	TIL	POTATO	VEGETABLES	JUTE	GROUND NUT	PULSES
ECONOMIC CLASS										
LANDLESS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POOR	2.34	0.97	0.14	0.07	0.00	0.09	0.00	0.00	0.00	0.00
SMALL	5.72	2.49	0.07	0.00	0.15	0.98	0.00	0.29	0.00	0.00
MIDDLE	21.26	14.05	1.05	4.04	3.16	3.90	0.00	5.24	0.00	0.59
RICH	15.14	10.61	1.55	1.25	0.00	3.95	0.15	0.00	0.00	0.00

DEVELOPED SAMPLES										
ACREAGE WISE PERCENTAGE DISTRIBUTION OF SOWN AREA IN DIFFERENT CROPS										
CROPS--	AMAN	BORO	MUSTARD	WHEAT	TIL	POTATO	VEGETABLES	JUTE	GROUND NUT	PULSES
SIZE										
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01-1.25	7.89	5.47	0.47	0.52	0.66	2.25	0.00	0.59	0.00	0.00
1.25-2.5	16.02	9.04	0.75	1.10	0.59	3.02	0.00	1.47	0.00	0.00
2.5-5.0	16.71	11.95	1.60	2.89	0.88	2.84	0.15	1.69	0.00	0.00
5.0-10.0	3.02	2.07	0.00	1.04	1.18	0.00	0.00	1.78	0.00	0.59

TABLE: 4.2 D

LESS DEVELOPED SAMPLES										
CLASSWISE PERCENTAGE DISTRIBUTION OF SOWN AREA IN DIFFERENT CROPS										
CROPS--	AMAN	BORO	MUSTARD	WHEAT	TIL	POTATO	VEGETABLES	JUTE	GROUND NUT	PULSES
ECONOMIC CLASS										
LANDLESS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POOR	1.41	0.00	0.11	0.74	0.00	0.00	0.00	0.00	0.00	0.00
SMALL	3.76	1.01	0.18	0.81	0.16	0.44	0.00	0.48	0.00	0.00
MIDDLE	24.89	6.43	1.17	3.17	1.84	4.78	0.14	3.06	0.04	0.30
RICH	27.03	4.63	0.51	3.85	1.74	4.43	0.03	3.33	0.06	0.30

LESS DEVELOPED SAMPLES										
ACREAGE WISE PERCENTAGE DISTRIBUTION OF SOWN AREA IN DIFFERENT CROPS										
CROPS--	AMAN	BORO	MUSTARD	WHEAT	TIL	POTATO	VEGETABLES	JUTE	GROUND NUT	PULSES
SIZE										
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01-1.25	10.00	0.67	0.26	1.43	0.55	2.72	0.19	1.01	0.12	0.30
1.25-2.5	12.00	4.73	0.48	2.12	1.06	2.47	0.06	1.59	0.00	0.30
2.5-5.0	22.25	5.67	1.06	2.58	1.74	2.79	0.00	1.88	0.00	0.30
5.0-10.0	13.65	1.72	0.66	2.55	0.48	1.56	0.00	1.31	0.00	0.30

CONCLUSION

To conclude, it is visible that there is an increasing extent of crop diversification in the survey findings. According to acreage analysis, higher acreage group in developed samples cultivates (winter) rabi crop in large area than higher acreage group in less developed samples. On the other hand, the higher acreage group in less developed samples cultivates kharif (summer) crop in large area. Regarding Economic class analysis, similar picture arises on the issue of sown area of different crops that the self employed middle peasants owned major portion of sown area in common samples, developed samples, and less developed samples. Crop diversification is greater among higher economic class. In the cases of all classes taken together, the total land devoted to aman paddy is very high, next to which is boro paddy, potato which is used for commercial purpose. Regarding the rich peasant and middle peasant classes the study observed a considerable amount of land being used for the purpose of wheat, potato and jute. For other classes this pattern is not so visible in the survey area. This clearly reveals that crop diversification is more visible among the exploiting classes and the self employed classes. The pattern of crop diversification in developed samples is somewhat different than less developed samples. This study observed that farmers in developed samples cultivated pulses (remunerative crops), and not cultivated groundnut due to less remunerative. Farmers in developed samples cultivated less vegetables compared to less developed samples. Farmers in less developed samples are cultivating vegetables and groundnut since these crops needed very less water. Farmers of this area have been cultivating these crops for many years. Farmers cultivate these crops due to increase in marketability and greater return in a short duration.

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