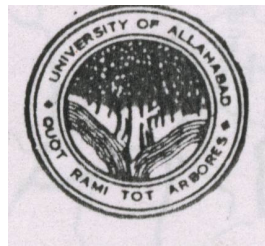


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Village Survey Study in Uttar Pradesh (Khatangiya Village)

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**Agro-Economic Research Centre
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Foreword

India has a long record of village surveys and resurveys, since pre-independence period to the post-independence period, which witnessed a sharp increase in the interest among social-scientists, economists and policy formulators in village surveys across India. During the span of 10 years, since independence the union government and other institutions have been sponsoring researches on the conditions and structure of rural India and on the management and economics of farming etc. wherein, these data appeared to be an useful source of informations. But the secondary data generated by the various government departments or the data generated through population censuses or through large scale nation-wide surveys done by the National Sample Surveys could not serve the essential purposes of understanding the broad general purpose of larger contexts. This realization led to a series of village survey by various Agro-Economic Research Centres (AERCs) established and funded by the Union Government as well as by various individual researchers in the universities and other institutions. Village Surveys are the usual and common method of collecting rural data in India. This research study entitled, “Village Survey Study in Uttar Pradesh (Khatangiya Village)” was conducted to create a longitudinal panel data set, to capture the socio-economics of the village.

This study revealed that there was a percentage change by 382.59% in the population of the village during current resurvey over last survey. The literacy increased from 38.62% in last survey to 68.98% in the current resurvey. The family size in the survey was 9 and in the current survey it was 5. The educational status among the males and females both has been improved considerably. Reading competency was comparatively higher among boys than that among girls. The arithmetic competency was superior among boys of private schools. The majority of children both boys and girls were in severely underweight category of BMI in Khatangiya village. Vulnerability due to climate extremes was high, moderate and low in the village. To combat with price-crash, reliefs were adopted by Government, NGOs and individuals. The change in composition was 70% from others to yamunapari breed of goat during 2014-19 in Khatangiya village. OBCs and general castes were cultivators and dominating, Land-use pattern has changed significantly. Cropping intensity was 200% and irrigation intensity was 100%. The farm household income was lowest in livelihood groups.

This study has been conducted and supervised by Dr. Rajendra Singh, Ex. R.O., AERC, Allahabad, starting from the selection of village, sampling, household survey, group discussion collection of secondary informations and thereafter, supervised the posting of primary data on MS Excel, analysis of data and drafted the report and executive summary. Dr. H.C. Malviya assisted in collection of secondary information and sampling, conducted field survey, posting and analysis of data. Sri Hasib Ahmad, Sri S,N, Shukla, Sri R.S. Maurya, Sri Gaurav Prajapati and Miss Twinkle Thapa conducted the field survey. Sri Gaurav Prajapati and Miss Twinkle Thapa conducted posting of data and analysis too. Sri Ovesh Ahmad typed the draft report and executive summary. Our thanks are due to the C.D.O. Prayagraj, B.D.O., Jasra, Panchayat Secretary, Rozgar Sevak, School Teachers and Village Pradhan of Khatangiya village for their ungrudging cooperation and assistance in completing this study.

Any comments and suggestions for improvement in the report of this study will be acknowledged thankfully.

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Field Survey

Field Survey

Field Survey

Field Survey, Posting and analysis of data.

Field Survey, Posting and analysis of data

Typing of the Report

Secretarial Services

Photocopying of the Report

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Executive Summary

Introduction

It is quite uncontroversial that socio-economic development of India still lies in the multidimensional development of its villages. India has a long record of village surveys and resurveys, since pre-independence to post-independence period witnessing interest among policy formulators in village survey across India. Also during the span of 10 years since independence the union government and other institutions have been sponsoring researches on the condition and structure of rural India and on the management and economics of farming etc. where in, these data appeared to be an useful source of information. Village surveys are the usual method of collecting rural data in India. These village surveys include all the aspects of the life of the whole village wherein, some surveys are designed to examine the land utilization pattern some for the types and systems of farming, some for inputs and outputs, some for profits and losses of farming, some for levels of living, some for migration and immigration and some for the incidence of debt and so on and so forth.

On the other hand, continuous village surveys and resurveys are the important devices (Schemes) for being acquainted with the socio-economic dynamism of villages. The empirical data collected over time on the social and economic aspects of village communities become the basis of analysing various changes occurred and provided basis for all sorts of development policies. These survey highlight the conditions which enable villagers to survive through ups and downs in their socio-economic strength as well as constraints of village communities and sustainable developments can be brought forward by such surveys to enable the policy formulators for planning suitable policies.

In view of the above stated facts this study entitled, “Village Survey Study in Uttar Pradesh (Khatangiya Village)” was conducted with the following main objectives:

Objectives of the study:

1. The overall objective of the study was to create a longitudinal panel data set, to capture the socio-economic dynamics of the village. The purpose was to assess the pace, process and pattern of rural changes by means of repeated surveys in the selected village followed by the resurvey of the same village at an interval of 5 years and,
2. The focus was on agricultural change and changing pattern of rural livelihoods and its implication for future development. This study also evaluated the efficiency of government interventions in rural areas and key drivers of changes in village economy.

Methodology of study:

This study was based on both primary and secondary data. The primary data were collected by survey method through specially structured schedules and questionnaires by the coordinating centre. The secondary data were collected from the offices of state, district, block, village and village level institutions. Since, it was resurvey of village khatangiya. Which was surveyed in 1964-65. During current resurvey in 2019-20 the village functionaries like Village-Pradhan, Aaganwari Workers, School Teachers, Village Lekhpal, Panchayat Secretary and Rozgar Sewak were consulted for itinerary in the resurvey.

Sampling Design

(a) Selection of village:

As per the final study design received on 11-11-2019, Khatangiya village was selected which had been surveyed in 1964-65 under the title, “Khatangiya Socio-economic Survey of a Village in Trans-Yamuna Tract of Allahabad”.

(b) Selection of Households:

The basis for sampling of households was that the total number of households in Khatangiya village had exceeded 400. Hence, proportionate random sampling was attempted after categorising the total households existing in the village into two broad categories i.e. (1) Land owners and (2) Land less households. The sample households were chosen in proportionate to

the total numbers in each category restricting the total samples of households to 300 on an overall for indepth study.

Survey Approach:

- (i). For village level information.
- (ii). For Group level information.
- (iii). For Household level information.

Main Findings of the Study

- The population of Khatangiya village had increased tremendously during the span of 1964-65 to 2018-19.
- The literacy percentage has increased from 38.62% in the last survey to 68.98% in the current resurvey showing 78.61% change in the Khatangiya village.
- There was 388.91% change in the population of Khatangiya village during 2018-2019 over 1964-65.
- The number of males in comparison of females was increased considerably during the span of 1964-65 to 2018-19 in Khatangiya village showing reverse change in the sex ratio.
- During last survey child-marriage was very common while, during current resurvey marriages were carried-out among grown-up persons.
- The highest number of births as well as deaths were reported in the BPL category of scheduled castes who were the most backward in village Khatangiya.
- On an overall reading competency among boys was comparatively of higher level than among girls.
- In case of the level of arithmetic competency among children of Khatangiya village it was found that in one standard boys were superior and in other standard girls were better.
- The level of reading competency among the children of private school was much better as compared to that in Govt. School on an overall in Khatangiya village during 2018-19.

- Majority were not facing acute poverty as more than 50% responded not to be worried ever for food in Khatangiya village.
- Both male and female children in majority were severely underweight in the Khatangiya village.
- Among the adults who had opted dairying as secondary occupation the majority were OBCs in Khatangiya village.
- Female adults were negligible, i.e. only 11.51% of the total adults in all the occupational groups in Khatangiya village.
- The higher number of APLs among SCs confirms that they were better and economically sound in comparison of the APLs among other castes.
- The cropping intensity has increased from 196.83% in the last survey to 198.69% in the current resurvey in Khatangiya village.
- The land use pattern has changed significantly in the village because in the last survey the main source of irrigation was well and in the current resurvey it was Tube-Well.
- The average size of farms during the last survey was estimated as 6 acres. While during the current resurvey it was estimated as 1.56 acres in Khatangiya village.
- During Zaid season no crop was reported to be grown. Also no perennial crops were grown. Rainfed crops were rarely grown in Khatangiya village.
- Regarding change in cropping pattern, on the whole there was a change by 35.91% in the current resurvey period over the last survey period.
- The staple foodgrain crops, i.e. paddy as well as wheat were grown in the more than 96% area on almost all the farms in Khatangiya village.
- The level of diversification of crops on the farms of Khatangiya village was complete and special diversification showing HHI=0.01 or -0.00 on all the farms and on the aggregate level too.
- The changes in the yield of the potato during the current resurvey over the last survey was 861.54% showing a bumper change in Khatangiya village.
- All the major produces were reported to be sold in the nearby mandi in Jasara town. Dairy produce as fluid milk was realized at average price as Rs. 30 to 35 per litre in the village to local consumers.

- The annual household income from non-farm livelihood was comparatively much higher. The off-farms household income was considerable. But the farm household income was lowest among all the livelihoods / occupations in Khatangiya village.
- The respondents from OBCs were the dominating group of livelihoods in Khatangiya village. Among cultivators the respondents from OBCs were on Higher Side in comparison to their castes in all the livelihood groups.
- Farmers as well as labours were found to be most vulnerable groups among the villagers of village Khatangiya.
- Paddy and wheat being staple food crops were the most vulnerable food grain crops and potato was the least vulnerable vegetable crop in Khatangiya village.
- Price crashes for staple foodgrains such as paddy and wheat crops occurred more oftenly in Khatangiya village.
- The hardships due to cold waves to crops was of high degree, to cattle it was moderate but to ruminants it was low and to fisheries it was nil.
- Vulnerability due to climate extremes faced by livestock, poor men and women and the children was high moderate and low in Khatangiya village.
- The poorest peoples were the hardest hit from drought during the last five years in Khatangiya village.
- To combat with erratic rain-falls, heat and cold waves, crop diversification as well as livelihood diversification were adopted at individual level in Khatangiya village.
- As regards the coverage under the government schemes, 97.26% coverage was there under BPL card scheme and 100% of beneficiaries were satisfied.
- Under K.C.C. card scheme only 28.75% coverage was reported and 100% of the beneficiaries were satisfied with the scheme.
- Under MANAREGA job card scheme the coverage was 38.75% and only 77.41% of the beneficiaries were satisfied with the scheme.
- Under I.C.D.S./ Mid-day meal scheme 42.21% coverage was there and 100% of the beneficiaries were satisfied under this scheme.
- Under LPG scheme (PM-UJJWALA) 17.33% were covered during 2018-19 and 100% beneficiaries were satisfied.

- Under Swachh Bharat Mission scheme there was 14.63% coverage and 100% beneficiaries were satisfied.
- About major varieties cultivated were Mansoori (Moti) for Paddy and U.P.-110 for wheat in Khatangiya village.
- The varieties discontinued during 2014-19 were sarju-52 of paddy and RR-21 of wheat in Khatangiya village.
- The changes in composition of cattles was 60% from indigenous to crossbreed. Among buffaloes it was 80% and among goats it was 100% from others to yamunapuri breed in Khatangiya village.

Policy Recommendations

Based on the main findings of the present study the following policy recommendations are predicted:

1. To check the tremendous increase in the population of Khatangiya village some strict and effective family planning measures must be implemented by the Govt. as well as N.G.Os and individuals.
2. Although literacy has improved in the village but higher educational level is essential for the required changes in the village.
3. Reverse changes in the sex-ratio of this village must be removed by self-control.
4. The higher birth and death rates particularly among B.P.Ls (S.Cs) must be checked in the village through self-control and other suitable measures.
5. Educational tactices in Govt. schools must be improved to compete private schools.
6. Because majority of male and female children were severely underweight therefore, nutritional levels must be improved in the village.
7. Female adults must be encouraged to join SHGs and adopt some jobs. The Govt. must implement suitable processing units for agri-products etc. on large scales

8. In summers (Zaid) season also some suitable varieties of vegetables or rainfed crops must be imposed/ grown to increase the cropping intensity by the cultivating households.
9. Since the annual income of farm households was found to be lowest in the village. Hence, growing spices, vegetables or commercial crops in all the seasons must be lured to the farmers to increase their income.
10. Suicides among the poor and labourers were reported in the village. Hence, they must be taken care of such unhappenings.
11. To combat with the hardships, droughts and cyclones the government must provide suitable assistance at their doors.
12. To combat with erratic rainfalls, the farmers must adopt suitable crop diversification and suitable livelihoods must be adopted by the labourers and the poor.
13. Agricultural extension services to the needy farmers must be provided by Govt. or any suitable agencies in the village.
14. Infrastructural facilities were lacking acutely in the village. So it must be taken care to provide as their first need by the Govt.
15. Livestock rearing must also be lured to be adopted by the poor farmers of this village to increase/ double their household income.

Chapter-I

Introduction

I.1.: Introduction

I.1.1: Need and Scope of the Present Study

It is quite uncontroversial that social economic and political development of India still lies in the multidimensional development of its villages and rural population. India has a long record of village surveys and resurveys, since pre-independence period to the post-independence period which witnessed a sharp increase in the interest among social-scientists, economists and policy formulators in village surveys across India. This was partly in response to the need felt by the state and union governments to have a reliable and accurate information on socio-economic and political configurations in the rural context to facilitate the process of economic growth and change that it planned for, but the interest was also sustained by the fact that the critics of state and union government policies provided a central place to the rural context in the scheme of village survey studies. The state and union governments as well as its critics recognized that India lives in its villages and the growth and transformation of the economy needed an accurate knowledge of the rural context.*

This context was a very complex one. Villages were obviously witnessing a great deal of social, economic and political transformation, but these villages were also remained as a good deal of the old baggage. Moreover, one also witnessed a tremendous amount of diversity with each displaying its own specificities. It was obviously clear that such a complex reality with its dimensions of the continuity and changes, the general and the specific openness and territoriality could not be captured adequately by the secondary data generated by the various government departments or by the data generated through population censuses or through large scale nationwide surveys done by the National sample Surveys, although these data could serve the essential purpose of understanding the broad general purpose of larger contexts. Thus, it is this realization that led to a spate (series) of village surveys by various Agro-Economic Research Centres

(AERCs) established and funded by the union government as well as by various individual researchers in universities and other organizations.**

Also during the span of 10 years since independence the union government and other institutions have been sponsoring researches on the conditions and structure of rural India and on the management and economics of farming etc. wherein, these data appeared to be an useful source of information, village surveys are the usual and common method of collecting rural data in India. These village surveys include all the aspects of the life of the whole village wherein, some surveys are designed to examine the land utilization pattern, some for the types and systems of farming, some for inputs, outputs, some for profits and losses of living, some for migration and immigration and some for the incidence of debt and so on and so forth. Apart from these village surveys attempts on demographical, educational and various other statistical and time series surveys of above said characteristics were done.***

On the other hand continuous village surveys and resurveys are the important devices (schemes) for being acquainted with the socio-economic and political dynamism of villages. The empirical data collected over time on the social, economic and political aspects of village communities become the basis of analyzing various changes occurred and provide basis for all sorts of development policies. These surveys highlight the conditions which enable villages to survive through ups and downs in their socio-economic and political strength as well as constraints of village communities and sustainable developments can be brought forward by such survey to enable the policy formulators for planning suitable policies.

Keeping the aforesaid facts in view the present study entitled “village survey study in Uttar Pradesh (Khatangiya village)”, was conducted with the following main objectives:

I.1.2: Objectives of the present study

1. The overall objective of the study was to create a longitudinal panel dataset, to capture the socio-economic dynamics of the village. The purpose was to assess the pace, process

**P.J. Thomas & K.C. Ramakrishnan (1937-1940): resurveyed some of these villages surveyed by G. Slater.

***B.S. Agarwal (1930-31), “Economic Survey of Mirapur Basahi village during 1930-31, Indian Journal of Economics.

and pattern of rural change by means of repeated surveys in the selected village followed by the re-survey of the same villages at an intervals of 5 years and.

2. The focus was on agricultural changes and changing pattern of rural livelihoods and its implication for future development. The study also evaluated the efficacy of government interventions in rural areas and key drivers of changes in village economy.

I.2.: Background Information

I.2.1: Background Information about the Survey

About the type of survey it was a resurvey study conducted on an earlier survey in the work-plan 1964-65 bearing village Study No.5 and Publication No. 22 published in the year 1970 by Agro-Economic Research Centre, Motilal Nehru Institute of Research, University of Allahabad, Allahabad. As regards the village profile, the name of the village was Khatangiya. Geographically it was located in the south-west corner of now Prayagraj district and lies between latitudes $24^{\circ}-47'$ and $25^{\circ}-47'$ north and longitude $81^{\circ}-19'$ and $82^{\circ}-29'$ east. Administratively village panchayat Khatangiya was found to be situated in Jasra block of Bara Tehsil in Prayagraj district of Uttar Pradesh. As regards the selection of village and households, village Khatangiya was under taken to be resurveyed during 2019-20 as per the decision in Director's meeting as a village already surveyed earlier (Resolution-A/4, dated 01-08-2019). About the selection of households, since the total number of households in Khatangiya village was more than 400. Therefore, proportionate and random method of sampling was applied to undertake the samples under the suggested categories restricting the overall sample households to 300 for indepth study as per the final study design (Resolution No. A/5 dated September 29-30, 2019) after discussion with Mr. D. Magumdar and Dr. B.C. Roy. The survey was conducted through the structured schedules and questionnaires prepared by the Coordinating centre.

I.2.2: Brief Review of the Earlier Survey

The earlier survey was entitled as **Khatangiya**

Socio-Economic Survey of A Village in Trans Yamuna Tract of Allahabad district.

The Agro-Economic Research Centre, Allahabad had undertaken a survey of six villages from three distinct geographical regions of Allahabad district under its programme of Preliminary Village studies during the year 1964-65. The survey of village Khatangiya was related to one of these six villages. The main objective of the village study was to collect benchmark data on the then prevailing socio-economic life in the Khatangiya village.

Situation and Main Features:

Village Khatangiya was situated in the Trans-Yamuna tract of Bara Tehsil under Jurisdiction of Jasra development block in Allahabad district which was about 16 miles away from Allahabad district head quarter. Village Khatangiya had 116 households and 617 people as per 1961 population census. It was mainly inhabited by Brahmans, Kshatriyas, Yadav and Harijan castes. Wells were the only source of water in the village. There was only one primary school in the village. The higher secondary school was at a distance of one mile. For university education the nearest place was Allahabad. The village was linked with Jasra by a kachcha road and adjoining villages by paths. Jasra was connected both by Rail and Road. The village was not electrified.

Social Structure of Sample Households:

Out of the total 58 sample households, 13.79% were Brahmans, 10.32% were Kshatriyas, 25.31% were middle castes and 46.55% were Harijans. Main occupation of surveyed Brahmans and Kshatriyas households was agriculture. Similarly middle caste households were engaged in agriculture, trade and labour.

Untouchability and Position of Women:

Untouchability was still followed in the village. Position of women was far from satisfactory. Purdah system was in vogue among Brahmans and Kshatriyas.

Family Size and Literacy:

The average family size in the village was 5.45 persons. The largest size with 10.63 persons was commons among Brahmins against the smallest with 3.78 persons among Harijans. Literacy was estimated as only 21.52%.

Occupational Pattern and Economic Status:

Out of the total 58 sample households in the village about 44.84% each were engaged primarily in agriculture and labour respectively. 10.32% households were mainly engaged in trade. Also about 41.28% of sample households had some subsidiary occupation in the village. Thus, about 60% of the surveyed population in the village was economically active and the remaining 40% was economically inactive. On an overall the people of Khatangiya village were in poor economic position and under backward economy.

Land Distribution:

Out of total 58 sample households only 37 households had owned land and 21 households had not owned any land. The average owned land per household was 6 acres and operated area was 5.15 acres. Two households had leased-in land one had leased-out his land. The distribution of land was much uneven.

Irrigation Facilities:

Only 32.78% of the land cultivated had irrigation facilities, canals, wells and tanks were the main sources of irrigation.

Cropping Pattern:

Cropping pattern in the village was of subsistence nature. About 71.47% of the total cropped area was under foodgrains, pulses on 21.84% and commercial crops were grown on 2.67% of the cropped area respectively. Paddy, Jowar, Bajra, Maize, Wheat and Barley were main foodgrains. While Gram, Pea, Urd, Arhar and Moong were pulses. Potato and mustard were the commercial crops grown in the village.

HYV Seeds, Manures and Fertilizers:

Use of inputs like HYV seeds, manures and fertilizers was insignificantly only 8.12 qtls. of manure per acre was applied on an overage by sample farmers. The per acre use of fertilizers was only 7.0 kgs. The use of HYV seeds was only 4.6 kgs. per acre in the village.

Production and Marketing of Agricultural Produce:

The production of all crops per acre was lower in the village or compared to the average yield rate of Uttar Pradesh. During the reference year (1963-64) the per acre production of Wheat, Barley, Gram, Paddy, Jowar, Bajra and Potato was 410kgs, 152kgs, 141kgs, 196kgs, 122kgs and 667 kgs respectively, which shows that agriculture was traditional in the village with medium holding size in the village. In the list of marketed surpluses wheat, barley, paddy, jowar, bajra and gram were the main crops in the village. About 57% of the foodgrains were sold in the village itself and 43% were sold outside the village. Among the buyers about 72% were consumers and 28% were traders in the village.

Livestock Owned:

Livestock rearing in Khatangiya village was of traditional type. The average value of a bullock was Rs. 60 only. The size of operational holding per pair of bullocks was 5.75 acres in the village as compared to an average 7.00 acres per pair in the Allahabad district.

Income and Expenditure:

The net annual income of all sample households in the village was Rs. 49,413 during the reference year 1963-64. About 69.14% of this income was generated from agriculture, 17.94% was from labour and the remaining 12.92% from trade. The average annual income of a sample household was Rs. 851.94. The annual income of households from agriculture, labour and trade as primary occupation was Rs. 1,121.65, Rs. 456.31 and Rs. 1,397.67 respectively. While the total expenditure of the sample households during the reference year 1963-64 was Rs. 45,738.00. The average expenditure per family was estimated as Rs. 788.00. The average expenditure of the sample households was in conformity with the Engels law of consumption. About 59.03 percent of the total expenditure was incurred on food items alone and explains the poverty and backwardness of the village. The break-up of remaining expenditure was as 13.98% on clothing, 1.51% on edible oils, 2.64% on education, 7.48% on social ceremonies and recreation, 4.95% on house repairs and 5.86% on other items.

The interesting fact emerging from the study was that with the increase in income, proportionate expenditure on food declined and on other items like housing, clothing and fuel remained constant but on luxuries like ceremonies, education and medicines had increased.

I.2.3: Historical Profile of the Village:

During the course of survey when the concerned officials of Revenue Department in Bara Tehsil of Prayagraj District were contacted for collecting all the required secondary information along with a map related to village Khatangiya, the team-leader and member investigators all had tried to get the proofs, evidences or any story on the historical profile of Khatangiya village from each of the revenue officials but nothing could be made available or traced-out through these officials. Like-wise the officials of development block, Jasra were also insisted to make available any information about historical profile of Khatangiya village, while they were reporting the required secondary information about the Khatangiya village. Apart from revenue and block officials, the officials of Aanganbari (Asha), village development officer, Rozgar sevak, Panchayat Secretary,

village Pradhan, School teachers and senior citizens of the village were also asked to furnish any information about the historical profile of village Khatangiya, but none could give/provide any authentic proof or information. Thus, it remained untraced from the village and other levels.

I.3: Review of Literature

In the past, various studies related to households of rural families and its various other aspects were conducted in India and many other countries. Numerous numbers of literatures are available which are discussed in the following paragraphs:

Dev. S . Mahendra (2004b), says that the Socio – Occupational factors have been known to be important determinants of the consumer expenditure pattern. Coming to the discussion of individual items the per capita consumer expenditure on food grains mostly.

Dev, S Mahendra (2004a) says that in the post-economic reform period, there has been a debate about the impact of reform policies on important indicators such as economic growth and other macro variables poverty, inequality, human development and employment. There have been improvements in some indicators such as the balance of payments higher growth in service higher accumulation of foreign exchange reserves.

Tilak G.B. Jandhyala (2002), says that using a recent household survey data on rural India, an attempt is made in this short article to estimate coefficient of elasticity of household expenditure one ducation to

- a) Government expenditure on education and to
- b) Household income.

Increase in government expenditure would induce households to spend more about and more on education. Thus, leading to a significant rise in the total expenditure on education in India. It means that one- until increase in household incomes would result in a less than proportionate increase in household expenditure on education. This is indicative of the strong relationship between poverty and education.

Jain L.R (1983), says that the simplest hypothesis allowing for the effect of variation in household size is given by supposing that consumption per person depends only on the level of income per person. A better approach, however will be one which introduce explicitly the effect of household size in addition to that of household income in the estimation of Engel functions.

Minhas B.S. (1988), found that many simplistic comparisons have recently been made between the NSS estimates of household expenditure and the independent data on private consumption form the national accounting system (NAS) Two supplementary notes, one dealing with standard eras of the NSS estimates of consumer expenditure and the other with the possibilities of non-sampling biases in the appendices.

Behrman R. Jere and Knowles C. James (1990), say that the stronger are the association between household income and child schooling. The lower is intergenerational social mobility and the less equal is opportunity. The estimates indicate that this association is considerable- for example the income elasticity of completed grades is five times the median estimate of earlier studies.

Thomas Duncan (1993), Most economic models treat the household as a black box this paper has attempted to poke into that box by examining household commodity demand patterns under a model of altruism (or common preferences of all household members) then the distribution of income within the household should have no impact on expenditure patterns. The proportion of the budget spent on food (at home and away) declines more if the income is in the hands of women although food composition also changes with nutrient intakes rising faster as women's income increases. The results suggest that the key to understanding household resource allocation may lie in a better understanding of household composition pattern and labor supply decisions.

Haque H. Mohammed (1995) says that an alternative method of estimating the increase in consumer demand for various consumption items is presented. The presented method of estimating the increase in consumer demand with respect to changes in total expenditure and total expenditure inequality makes an empirical contribution in the field.

Perotti Roberto (1996), found that at the risk of some oversimplification the recent literature on income distribution and growth can be divided into three main approaches. The fiscal policy, sociopolitical instability, and borrowing constraining /investment in education approaches. A fourth approach which can be called the endogenous fertility approach.

Foster D. Andrew and Rosensign R Mark (2002), found that the recent availability of longitudinal data from low-income countries make possible for the first time the identification of the consequences of growth- augmenting innovations for household income change. However it has become increasingly recognized that both the analysis and design of panel surveys is importantly affected by the break up of household over time.

Rose Elaine and Dealalikar Anil (1998), Review that the gender shock reduces saving for medium and large farm households, although there is no evidence that the shock affects saving for the landless and small farm household.

Havlicek Joseph, Tedford R. John (1985), says that the budget shares are generally more responsive to prices than to real total expenditure. Additionally the quantities demanded of convenient and non convenience foods are generally more sensitive to changes in Income and own price than to changes in cross prices.

Deaton Angus (1984), reviewed that the standard econometric exercise associated with household surveys is the estimation of Engel curves, usually in conjunction with the measurement of the effect on family demand pattern is of demographic composition particularly the number, age and sex of children

Musgrove Philip (1980), found that Household consumption properties are related to income above subsistence levels aggregation over households makes the total property depend on Income level. Concentration and asymmetry with income per Capita.

Deaton Angus (1989), the ability to test for discrimination in the allocation of goods between boys and girls is hampered by a lack of data on intra household distribution. For a given level of Income, families with children will spend less on adult goods in order to purchase children's

goods. The data show no evidence of discrimination between boys and girls in cote lousier and a small and statistically insignificant bias in favor of boys in Thailand.

Bharttacharya N. and Mahalonbis B. (1967), say that the problems of regional development and regional disparity have been exercising the minds of planners in India and elsewhere. It may be useful in this connection to have one or more objective statistical measures of regional disparity. This best studied by using the estimates of consumer expenditure like those thrown up by the NSS and other agencies for the difficulties of regional income estimation are well known.

Takur Jawahar, Bose L. Manik and says that (2000-2001), the adoption of modern rice varieties made substantial impact on household incomes in areas with developed infrastructure-assured irrigation transport and marketing facilities. The income equality is mostly on account of income from non-agricultural sources. Technological process in rice cultivation cannot be blamed of growing income inequality. In fact, income inequality was found less in technologically developed villages.

Hossain Mahabub (2004), states that access of rural household to land has been eroding due to continued growth of population and limited employment generation in the formal industrial and service sector activities. Rural households recognize these problems and have been trying to address them by utilizing the surplus generated by the technology – included growth in agriculture al productivity for under taking rural non farm activities. As a result, the rural non-farm sector has been expanding and has already become a major component of the rural economy.²³²³ Hossian Mahabub (2004), Rural Non-farm Economy :- Evidence from household survey, Economic and Political weekly, Vol. 39, NO. 36,PP. 4053- 40528

Singh Baluir (1973), found that on traditional lines, the analysis of family budgets runs essentially in terms of Engel function relating per capita expenditure on any specific item to per capita actual total consumer expenditure or income. This Engel function does not take into account differences in age, sex and work activity of household members. A knowledge of their effects is quite important for some aspects of public policy as well as for family budget studies for example policy decisions with regards to providing income tax relief on account of children

and other family allowances involve judgments about the household's standard of living and they can be greatly aided if the effects of household composition on consumption are known.

Standing Hilary and Bandyopadhyaya Bela (1985), say that the precise effect of women's participation in waged work on the family based household have received little detailed attention until recently this is particularly the case in many third world urban contexts where female labour force participation rates have been traditionally low until the recent emergence, of opportunities for women in 'New' gender-Segregated industries, such as electronics assembly for instance. The preliminary account concentrates mainly on changes in the domestic division of labors and on the distribution and disposal of women's wages. The major emphasis will be on the importance both of the class position of the household and of the cross-cutting effects of the household development cycle in understanding the varying effects which women's employment may have.

I.4: Scheme of Chapters

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Chapter-II

Methodology

II.1.: Definitions and Concepts of Terms, Words etc. used in the Study

Village: It is an old French name originated from the Latin word villa which means country-house. Thus, villas means group of country houses or villa dom (collection of villas). Therefore, village means an assemblage of houses smaller than a town. Village may be defined as: A village is a clustered human settlement or community larger than a hamlet but smaller than a town (with a population ranging from a few hundred to a few thousand). Through, villages are often located in rural areas the term urban villages are also applied to certain urban neighborhoods. Villages are normally permanent, with fixed devillings. However, transient villages can occur. Further, the devillings of a village are fairly close to one another, not scattered broadly over the landscape, as dispersed settlement.

Household: A household is a group of family members/persons normally living together and taking food from a common kitchen.

Holding: If the land is operated either by one person or by a group of persons being members of the same household the holding is called individual holding. If two or more persons belonging to different households share jointly (as partners) the economic and technical responsibility for the operation of the agricultural holding, the holding is called joint holding.

Holding Size: The NABARD has classified the farmers of India into the following four categories viz. marginal, small, medium and large farmers, on the basis of their landholding (i) Marginal farmers: All households with a landholding of less than 1 hectare have been termed as marginal farmers, (ii) Small farmers: All households with a landholding of 1 – 2 hectares have been considered as small, (iii) Medium farmers: All households with a landholding of 2 – 4 hectares have been termed as medium farmers and (v) Large farmers: All households with a landholding of above 4 hectares have been considered as large farmers.

Labour Force: The standard definition of labour force includes the males and females falling in the age-group of 16 – 60 years, but males and females falling in the age group of 7 – 15 years as well as 60 – 65 years also perform some light household activities, hence, they have also been considered in the labour force (after converting them in to standard man days) in order to avoid the under estimation of the magnitude of un-employment and/or under employment in the present study.

Operational Holding: It includes all land which is wholly or partly used for agricultural production and is operated as one technical unit by one person alone as well as with others without regard to title, legal farm, size or location. The technical unit is that which is under the same management and has the same means of production such as labour force, machinery and animals.

Agricultural Labourer: All those persons without any land but having a homestead and deriving more than 50 percent of their income from agricultural wages have been termed as agricultural labourer.

Non-Agricultural Labourer: Those who derive their income partly from agriculture and partly from other source fall under this category provided atleast 50 percent of their income is from non-agricultural sources. They need not have a homestead but must be residents of the village in which they are identified.

Earners: All household members who contribute financially towards the total family income are called earners. An earner may be defined as one whose income is sufficient for his/her maintenance and earning dependent whose income is not adequate for his/her maintenance.

Dependents: Those persons, who are dependent on others for their livelihood. Persons falling in the age group of less than 11 years and greater than 59 years are considered as dependents in the present study.

Reference Period: Reference period means the period to which survey data refers. In the present study the reference period was year 2018-19.

Household Income: Household income includes current income of all members of the household from all sources. It consists of both farm and non-farm income.

Farm: The area of land actually cultivated including land leased-in by the farmer and his family irrespective of title or location. The term farm or cultivated holding has been used synonymous to operational holding.

Fragment: All contiguous fields or plots of a farm constitute one fragment.

Cultivated Area: Net sown area plus current follow.

Cropped Area: It refers to the area total cropped in which area sown more than once during an agricultural year is counted twice or thrice as the case may be. If three crops have been taken in succession, the area is counted thrice.

Farm Enterprise: The farm enterprise is an income producing branch of the farm business such as crops or class of livestock.

Cropping Intensity: It is ratio of cropped area to cultivated area.

Worker: Worker is defined as the male family member of 15 – 60 years who work whole time on the farm. The female members do not work whole time on the farm. They attend to domestic work mainly hence, they have not been included among workers.

Helpers: Those family members who are not working whole time but working from time to time on the farm to help the workers i.e. women, children and old persons.

Farm Family Workers: Farm family workers are members of the farm family for whom work on the farm has first call on their time.

Casual Labour: The labour which are employed temporarily on daily wages during peak seasons.

Farm Workers: Farm workers include farm family workers and permanent farm servants (Annual farm servants).

Man day: Unit of work equivalent to 8 hours work of a male adult worker.

Animal Labour Day: Units of work equivalent to 8 hours work by a pair of draught animal is synonymous to animal labour day pair day.

Farm Assets (Investment): These include owned land, farm buildings (non-residential) wells, livestock, implements and machinery.

Working Capital: It includes the value of the human labour, seeds, manures and fertilizers.

Farm Output: It includes cash received from the produce (main and by-product) sold, value of produce used in the household or held over for the use of family, value of seed kept for sowing, value of produce given over to other as wages or customary charges to barber, washer man, carpenter etc. value of the by-products fed to the cattle or carried over to the next year as feed for cattle.

Inputs: These include the followings:

- (a) Wages of hired labour (cash and kind)
- (b) Imputed value of the family labour.
- (c) Value of hired and owned animal labour.
- (d) Value of seeds, manures and fertilizers.
(farm produced and purchased)

- (e) Depreciation of farm buildings, machinery and implements.
- (f) Rent paid for leased-in land.
- (g) Rental value of owned land.
- (h) Interest on owned fixed capital.
- (i) Irrigation charges, land renewal, cess, water charges etc.
- (j) Interest on working capital.

Concept of cost:

Cost – A₁: It includes

- (a) Value of hired human labour
- (b) Value of hired animal labour
- (c) Value of owned animal labour
- (d) Value of seeds (produced and purchased)
- (e) Value of manures (owned and purchased) and fertilizers.
- (f) Depreciation (implements, farm buildings etc.)
- (g) Irrigation charges.
- (h) Pond revenue, cess, water charges and other taxes.
- (i) Interest on working capital.

Cost – A₂: Cost A₁+Rent paid for leased-in land.

Cost – B: Cost A₂ + rental value of owned land + interest on owned fixed capital (excluding land).

Cost – C: Cost-B + imputed value of family labour.

Concepts of Income:

- i. **Gross Income:** The value of total produce including main and by-product at average price for different produce. It is synonymous with the value of output.
- ii. **Farm Business Income:** Gross income – Cost A₁ (Cost A₂ in case of tenant operated land)

- iii. **Family Labour Income:** Return to family labour and management i.e. Gross income – Cost B.
- iv. **Net Income:** (profit or loss): Gross income – Cost C
- v. **Farm Investment Income:** Net income + rental value of owned land + interest on owned fixed capital.

Primary and Secondary Occupation:

Primary occupation has been one among the listed occupations from which a household derived maximum income greater than 50 percent of the total household income. While secondary occupations have been those among the listed occupations from which a household derived meagre percentage of household income i.e. less than 50 percent.

II.2: Data Base:

This study was based on both primary and secondary data. The required primary data were collected by survey method through the schedules and questionnaires specifically structured by the coordinating centre seeming without pre-testing as these were lengthy and hectic. The required secondary data were collected from the offices of state, district, tehsil, development block, village and village level institutions. Since, this study was a resurvey of the village Khatangiya which had been firstly surveyed during 1964-65. This village had 116 households and 617 people as per 1961 population census during the course of first survey in the year 1964-65 which increased to 465 households and 2396 people in the year 2018-19. During the course of present resurvey in the current year 2019-20 all the village functionaries like village Pradhan, Aagan Wari workers, School teachers, word-workers, village Lekhpal, Panchayat Secretary and Rozgar Sevak were consulted for itinerary. Also personal observations of the hamlets of village Khatangiya was keenly done by the survey-team.

II.3: Sampling Design:

II.3.1: Criteria for Selection of Village:

As per the final study design received on 11-11-2019, we had proceeded further with this village survey study wherein, AERC, Prayagraj had to undertake a village already surveyed earlier and hence, following this criteria for the selection of the village, we had undertaken village Khatangiya which had been surveyed in the year 1964-65 under the title “Khatangiya: Socio-Economic Survey of A Village in Trans-Yamuna Tract of Allahabad District” bearing village Study No.5 and Publication No. 22 Published in 1970.

II.3.2: Criteria for Selection of Households:

The main basis for sampling of households was that the total number of households in Khatangiya village had exceeded 400. Therefore, proportionate sampling was attempted after categorizing the total households existing in the village into two broad categories i.e. (1) Land owners and (2) Landless households and thereafter, the sample households were undertaken in proportion to the total numbers in each category restricting the total sample households to 300 on an overall for in depth study. A considerable number of immigrant households were excluded from the list as maximum of them were not residing in the village as well as their where abouts were not traceable.

II.4: Survey Approach

The survey was conducted at three levels:

II.4.1: For Village Level Information:

All the necessary basic informations about the village were collected during the course of survey with the help of Lekhpal and Panchayat Secretary as well as Rozgar Sewak, Village Pradhan and School Teachers. Senior citizens of the village were also consulted for detecting the historical

profile of Khatangiya village. Aaganwari workers were also contacted for collecting the relevant information on households and their inmates.

II.4.2: For Group Level Information:

The group level informations for the present village survey study of Khatangiya village were collected through the three types of Group Discussion Schedules i.e. (1) Group Discussion Schedule – I, (2) Group Discussion Schedule – II and (3) Group Discussion Schedule – III optional (BMI and ASER – Test) particularly structured by the coordinating centre. Under Group Discussion Schedule – I the information relating to the frequency and exposures to shocks and degree of hardship faced by village during the last 5 years (2014-19), main coping strategies at household level in the village, adaptation strategies by different stakeholders and natural disaster management and relief operations during the last 5 years were collected with the help of Block officials and other stakeholders. Under Group Discussion Schedule – II all the issues of the village Khatangiya related to CGWB Survey, irrigation resources, pollution in surface and ground water, crop-wise use of NPK, use of pesticides in crops, use of the varieties of crops, proportion of indigenous and improved cattles, Marketing channel and procurement system, major forming systems and major group perceptions were collected for the last 5 years. Under Group Discussion Schedule – III optional the malnutrition through BMI (Body Mass Index) was calculated by the help of the ICDS workers as well as school teachers using the height and weight of children and relating it with their age in the format provided by the coordinating centre. Also for calculating the quality of basic education through ASER (Annual Status of Education Report) toolkit by the help of ICDS workers and school teachers in the format provided by coordinating centre on the class of study, type of school, ASER math level and ASER-reading level of the children of the sample households of Khatangiya village was done.

II.4.3: For Household Level Information:

The household level; informations were collected through the Household Schedules in two parts structured by the coordinating centre, wherein under the Household Schedule – Part-I the general information of the sample households, employment pattern of working family members, births

and deaths during last 5 years, school dropout of children, socio-economic status, ownerships of assets, income and expenditure details, food security issues, savings and borrowings, governance and policy issues and perceptions about changes in the households were collected by survey method visiting the households personally. Also under the Household Schedule- II the area under cultivation, cropping pattern, crop-diversification along with profit/loss and marketed surplus like informations for farmers have been collected, although, details of farming have been covered under ownership of assets in Household Schedule Part-I. In Khatangiya village the majority of sample households were farmers being dominant households in the village.

II.5: Dimensions Covered:

Since this village survey study was a resurvey, the generic dimensions covered were social, economic, agrarian, farming, ecological and policies. The resurvey had included particularly the social changes, demographic changes, agrarian changes, livelihood changes, economic changes, ecological changes and perceptions regarding government schemes and policies.

II.6: Analytical Tools

To cover the objectives of the study, apart from the simple mathematical and statistical tabular analysis, some other techniques were also used as detailed below:

II.6.1: Compound Annual Growth Rate (CAGR)

The Compound Annual Growth Rate has been worked out with the help of following formula:

$$CAGR = \left(\frac{\text{final value}}{\text{starting value}} \right)^{1/t} - 1$$

Where, final value= value of end years

starting value= value of beginning year

t = time in years

The CAGR formula is defined as $CAGR = \left(\frac{endvalue}{startvalue} \right)^{1/years} - 1$.

Like-wise when we know the rate per compound period (r) and the number of compound periods per year (n), we calculate the effective annual rate using $APY = CAGR = (1+r)^n - 1$ or $(1+r)^{n-1}$

II.6.2: Tabular Analysis

Both the primary as well as secondary data available through survey have been analyzed and presented using simple mathematical and statistical technique in the present study for deriving the required result as per the objective of the study.

II.6.3: Percentage Change

In the present study the percentage change has been worked out with the help of following formula:

$$\text{Percentage change} = \frac{\text{New value} - \text{Old value}}{\text{Old value}} \times 100$$

In case if the result is positive, it is an increase and if the result is negative, it is decrease. The value during 2018-19 is new value and the value during 1964-65 is old value.

II.6.4: Body Mass Index (BMI)

The Body Mass Index (BMI) is also known as Quetelet Index because it was invented by Adolphe Quetelet. In fact, it is a statistical measurement which compares as individuals weight and height. Although, it does not measure actually the percentage of body fat, yet it is very useful tool to estimate a healthy body weight based on how tall an individual is. Indeed, it is the most widely used fool to identify the weight problem. BMI is very easy to measure and evaluate. With the help of BMI one can come to know whether one is of underweight, normal weight, overweight or in the category of obesity. BMI can be defined as the individuals body weight

divided by the square of his height. BMI helps one to know whether he has a healthy weight or needs to lose his body weight or needs to gain weight. Its value is measured in kg/m^2 .

Calculation of BMI

BMI of any individual can be calculated with the help of the following formula:

$$\text{Body Mass Index (BMI)} = \frac{\text{Body weight}}{\text{height}^2}$$

The weight of an individual is measured in Kilograms and the height of the individual is measured in meters. Thus, with the help of World Health Organization (WHO) criteria for underweight and obesity, one can know whether he is under weight, normal weight, overweight or in obesity.

BMI categories for children in Kg:

1. Severely underweight = less than 16.5 kg/m^2
2. Underweight = 16.5 kg/m^2 to less than 18.5 kg/m^2
3. Normal weight = 18.5 kg/m^2 to less than 25 kg/m^2
4. Overweight = 25 kg/m^2 to less than 30 kg/m^2
5. Obesity = 30 kg/m^2 and above.

Precautions during measurement as per WHO

As per WHO the following precautions must be taken while taking measurements of height and body weight for calculating BMI:

1. While measuring height one should be bare footed and his/her face should be in a straight position.
2. Body weight must be taken on a reliable and perfect weighing machine.
3. While taking body weight one must wear minimum required clothes.

II.6.5: ASER (Annual Status of Education Report)

ASER stands for Annual Status of Education Report. This is an annual survey that aims to provide reliable annual estimated of children's schooling status and basic learning levels for each state and rural districts in India. In the present study the levels of reading competency and arithmetic competency of the children (age group of 6-12 years) by sex, caste and schools, were studied with the help of ASER toolkit test provided by the coordinating center.

II.6.6: Crop Diversification Index

The extent of crop diversification by the sample farmers of Khatangiya village has been worked out with the help of HHI (Herfindhal Hirschman Index) formula as given under:

$$HHI = \sum_{i=1}^n p_i^2$$

Where P_i is the proportion of area under crop and

$$P_i = \frac{A_i}{\sum_{i=1}^n A_i}$$

In which

A_i = actual area under i^{th} crop

$I = 1,2,3,\dots,n$ (number of crops)

n = total number of crops

Thus, HHI is defined as sum of the squares of all 'n' proportions and as a measure of concentration. For increasing diversification, it is bounded by '0' (complete diversification) and 1 (complete specialization). HHI (Herfindhal Hirschman Index) is an inverse measure of crop diversification. It assumes that very large alternatives of production choices are available. Taking

the case of crops, HHI assumes that there exists a very large numbers of crops, which can be grown by the farmers. If the total area was equally shared among the large number of crop alternatives, then the share of each crop would be near to zero. Therefore, HHI uses deviations between actual shares of each crop against equal share of all possible alternatives given by zero.

II.7: Limitations of Study:

Prima-Facie, the re-starting of this village survey and resurvey study or continuous village study was indeed a welcome target envisaged by the Government of India, Ministry of Agriculture and Farmer Welfare, Department of Agriculture Cooperation and Farmers Welfare, Directorate of Economics and Statistics (AER Division). Also because, the socio-economic development of India, still lies in the development of its villages, the need felt by the union government to have a reliable information on socio-economic configurations in rural context to facilitate the process of economic growth and change in the villages of India through the scheme of village survey and resurvey studies to be carried-out by the AERCs and AERUs established in the country to conduct studies on agricultural economic problems of the country which are already vast and enormous among themselves. However, these village surveys and resurveys are most welcome, but the main focus must be on the socio-economic and agrarian aspects particularly.

In the present village survey study apart from the major aspects all other issues pertaining to climatic, ecological, surface and ground water, malnutritional, educational, demographical, sex-ratio, literacy, rehabilitation and relief measures, governance schemes, public distribution system, health and higeme etc. have been included in detail which have made this study lengthy and hectic in nature. Also owing to this reason the finalization of study design etc. was delayed 5 months by the coordinating centre. Moreover adhering with the time-line fixed for this study was violated due to arbitrary coordination system followed for conducting studies by AERCs and AER Units of the country.

Chapter-III

An Overview of Study Village

Table-III-1:
An overview of the village Khatangiya

| Particulars | In 2019 |
|---|--|
| Location Code (as per 2011 Census) | PIN Code – 212 107 |
| Geographical area of the village | 232.60 hectares |
| Total Households | 465 |
| Total Population | 2396 |
| Post Office and Pincode | NH-76, Jasra- PIN Code- 212107 |
| Gram-Panchayat | Khatangiya |
| Assembly Constituency | Bara |
| Parliament Constituency | Allahabad – South |
| Block/Tehsil | Jasra/Bara |
| District | Prayagraj |
| State | Uttar Pradesh |
| Nearest Primary School(with distance) | Prim. Path. Khatangiya |
| Nearest Secondary/Higher Secondary School (with distance) | Jasra – 1.5Km |
| Nearest College (with distance) | A.S.M. Degree College, Jasra, 1.5K.M. |
| Nearest Health Centre/Hospital (with distance) | Jasra 1.5 Km |
| Nearest City or Town (with distance) | Jasra (Town) 1.5 Km |
| Nearest Railway Station (with distance) | Jasra Railway Station – 1.5Km |
| Nearest Airport (with distance) | Bamrauli – Allahabad |

III.1.: Village Profile

III.1.1: Geographical and Administrative Location of the Village Khatangiya:

Geographically village Khatangiya was found to be located in South-West corner of now Prayagraj District of Uttar Pradesh and spread-out between latitudes of 24°-47^l North and longitudes of 81°-19^l east. While Administratively village Panchayat Khatangiya was situated in

Jasra Development Block of Bara Tehsil in Prayagraj District of Uttar Pradesh. This may be verified from the enclosed map of Development Block Jasra including its villages. Enclosed Map of Jasra Block to be traced.

III.1.2: Climate and Rainfall:

The climate of Khatangiya village in general was sub-tropical monsoon type. The annual evapotranspiration was found to be varied between 1200 – 1400 m.m. in Vindhyan-Zone of 8 Agro-climatic zones of Uttar Pradesh, wherein, Khatangiya is situated. The average minimum temperature ranged around 7°C in the coldest month January during 2018-19. While the maximum temperature was told to be ranged around 47°C in May the hottest month during 2018-19. The annual relative humidity was found varying from 30 – 40% in Khatangiya.

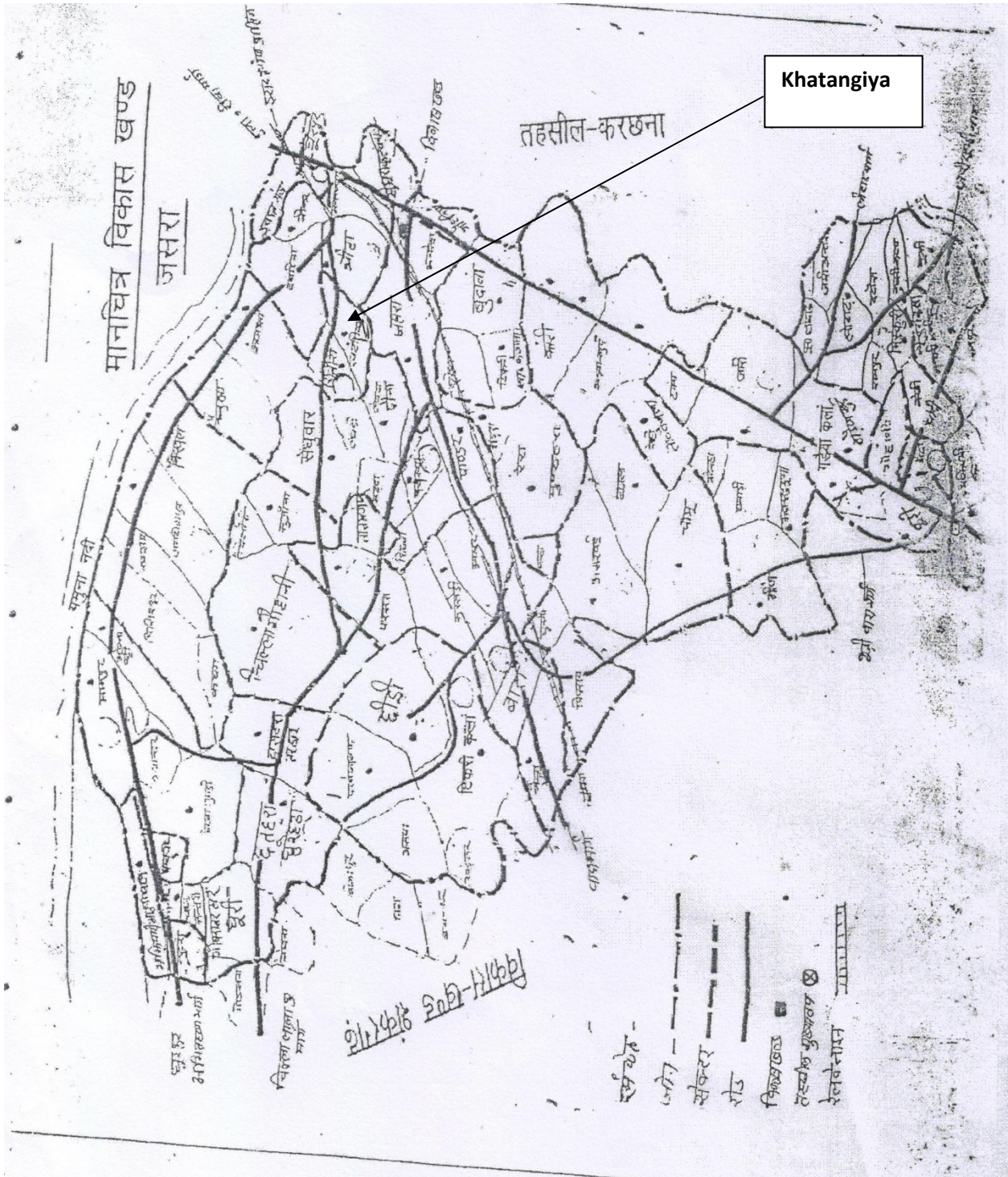
As regards the rainfall in Khatangiya village, almost 90% of the annual rainfall was told to be received during four months of rainy season from mid June to mid October. The average annual rainfall ranged from 650 m.m. to 950 m.m. during 2018-19.

III.1.3: Soils:

In Khatangiya village the soils were hight, black and red. Some of area had undulated and rocky soils. Low elevation area had consisted black and red soils. Medium elevation area consisted loam soils. At the high elevation 50% area had red soils and rest were rocky.

III.1.4: Communication Telecommunications

In Khatangiya village only a sub post-office was there which, was found not functioning smoothly and regularly. No telegraph office was still established there in the village. About telecommunications, mobiles android phones and smart phones were found to be used more commonly by almost all the sample households. But tablets and laptops were rarely used by a few students. Use of P.Cs and P.C.Os were not reported in the whole village.



III.1.5: Transportation Facilities: Road, Rail/others:

The nearest transportation facility by road was the National Highway NH-76 Allahabad – Jasra Road which leads to Banda and Chitrakut and known as NH-76. The nearest Railway Stations connecting to Khatangiya village were Jasra Railway Station and Madaraha Railway Station parallel to the Allahabad – Jasra Road (NH-76). Khatangiya is linked with partly concrete and partly kharanja and kachcha road with Jasra and other near by villages.

III.1.6: National Resources: Forests/Rivers/Ponds/wells/Flora and Fauna:

In village Panchayat Khatangiya the permanent pasture cum grass land measuring about 2.6 acres in the north side of village towards the bank of Yamuna river was reported by the village Pradhan. River Yamuna was told to be shifted towards north side at a distance of about 2.5 Kms from Khatangiya. Only a single pond was found to be situated in the mid of the village having scanty water in it. Also in the whole of village two old packa wells were there but the plinths of wells were ragged and hence these wells were not in use. The flora and fauna in the village was extremely poor due to uncertain and erratic rainfalls during 2018-19.

III.1.7: Demographic Profile of the Village

III.1.7.1: People:

As per agriculture census in the year 2017-18 the total number of households in Khatangiya village Panchayat was reported as 465 and the total population was 2396 wherein the male population was reported as 1380 and the female population was reported as 1016 in the village.

III.1.7.2: Religion:

In the village Panchayat Khatangiya not a single household of any other religion was reported. Thus, in the whole of village only the households of Hindu Religion were there in the village.

III.1.7.3: Village Settlement Pattern:

Regarding settlement pattern in Khatangiya village one hamlet popularly known as kaluram-kapura was separately colonized and the rest of the households of village were habituated based on the castes like Harijan Patti, Yadav and Kushwaha Patti, Thakur Patti, Brahmin Patti and immigrants, who were habitated either outside in the plots or anywhere in the village.

III.1.7.4: Literacy:

On an average the total literacy percentage in Khatangiya village was reported as 65.66%. While the average literacy percentage among females was reported as 28.50% in the village. While the percentage of female population in Khatangiya village was reported as 48% of the total population in the village.

III.1.7.5: Poverty:

The gentry of the peoples and the levels of living among majority of the households of village Khatangiya by look was of the backward economy. The maximum of the households belonging to O.B.Cs and S.Cs were B.P.L. (Below Poverty Line) in this village. As per the records of the P.D.S. shaps the list of households showed that still about 42% of the total households were B.P.L. (Below Poverty Line).

III.2.: Livelihood / Employment and Migration Status:

III.2.1.: Livelihood Pattern/Types:

Out of the total peoples of Khatangiya village about 580 were reported to get their livelihood from agriculture, 380 peoples were told to receive their employment as agricultural labourers, 300 peoples had earned their livelihoods as non-agricultural labourers within the village and in nearby villages and Jasra town.

III.2.2: Primary/Secondary/Tertiary Livelihoods

In the Panchayat village Khatangiya as a whole about 75% of total peoples were reported to get their livelihoods from agriculture and agricultural labourers as their primary occupation, 10% were told to get their livelihoods from non-agricultural labourer as secondary occupation and 15% had got their livelihood from trade and outside jobs as tertiary occupation.

III.2.3.: Pattern of Migration:

Out of the total peoples of village Khatangiya about 120 peoples were reported to migrate for outside jobs during the year 2018-19 to nearby towns and other states too.

III.3.: Agriculture Status of the Village:

III.3.1.: Land Utilization Pattern:

III.3.1: Land Utilization Pattern of Khatangiya Village as per Agriculture Census 2017-18.

| Sl. No. | Particulars | Area in hectares |
|----------------|--|-------------------------|
| 1. | Total Geographical Area | 232.60 |
| 2. | Forest Area | 0.00 |
| 3. | Land Not Available for Cultivation | 15.70 |
| 4. | Permanent Pastures and other Grazing Lands | 1.10 |
| 5. | Land under Misc. Tree Crops and Groves | 0.00 |
| 6. | Culturable Waste Lands | 1.20 |
| 7. | Permanent Follow Land | 0.00 |
| 8. | Current Fallow Land | 0.00 |
| 9. | Net Area Sown | 214.60 |

Source: Office of Revenue Inspector Bara Tehsil of Prayagraj

III.3.2: Irrigation Pattern in Khatangiya Village During the Year 2018-19

| Sl. No. | Particulars | Sources of Irrigation | | | | | Total Net Irrigated Area |
|---------|-------------------------------|-----------------------|------|------------|------------|--------|--------------------------|
| | | Canal | Tank | Open-wells | Tube-wells | | |
| | | | | | Electric | Diesel | |
| 1. | Numbers of Irrigation sources | 0.00 | 0.00 | 1 | 26 | 60 | -- |
| 2. | Area Irrigated in hectares | 0.00 | 0.00 | 0.00 | 66 | 141.10 | 207.10 |

Source: Office of Revenue Inspector Bara Tehsil of Prayagraj

III.3.3: Cropping Pattern

Cropping pattern in Khatangiya village was of subsistence nature still. About 75% of the total cropped area was under staple foodgrains, pulses were grown on 20% and commercial crops (Potato and Mustard) were grown on 5% area roughly. Paddy, bajra, Jowar and Maize were the main Kharif foodgrains grown in the village. While Wheat barley as main Rabi foodgrains were grown in the village. Among the pulses, urd, moong and arhar in Kharif and gram and pea in Rabi season were grown in the village. Potato and Mustard were grown during Rabi season as the commercial crops in the village.

III.3.4.: Livestock Resources (Cattle/Birds/others):

Livestock Reared in Khatangiya village During 2018-19

| Livestocks reared | | | | | Total Numbers |
|-------------------|------|-----------|--------|-------|---------------|
| Birds | Cows | Buffaloes | Sheeps | Goats | |
| 256 | 48 | 58 | 110 | 116 | 588 |

III.3.5.; Land Tenure Systems and Land Reforms Measures:

Under land tenure system in Khatangiya village only the leasing-in and leasing-out tenancy on share cropping basis of the output was prevalent commonly in the village. Also only a few had

practiced contract farming in terms of money in the village. As the land Reform measures consolidation of holdings was done many year ago in the village.

III.4 and III.5: Developmental Institutions and Infrastructure:

III.4.1 to III.4.5 and III.5.1 to III.5.6.: Details of Development and Infrastructure in / near Khatangiya Village during 2018-19

| Sl. No. | Institutions and Infrastructure | Available in village or not | | If No then place of Availability (Name of Place) | Distance in Km. |
|---------|---|-----------------------------|----------|--|-----------------|
| | | Yes/No | Numbers | | |
| 1. | Primary School | Yes | 02 | - | - |
| 2. | Higher Secondary School | Yes | 01 | - | - |
| 3. | Primary Health Centre | No | 00 | Jasra | 02 |
| 4. | Private Doctor/Medical practices | Yes | 01 | - | - |
| 5. | Veterinary Dispensary | No | 00 | Jasra | 02 |
| 6. | Degree College | No | 00 | Jasra | 02 |
| 7. | Govt. Training Centres (ITI & Politechnic etc.) | No | 00 | Bara | 08 |
| 8. | NGOs or SHGs (No) | Yes | 02 | - | - |
| 9. | Nearest Motorable Road | Yes | 01 NH-76 | - | - |
| 10. | Post Office | No | 00 | Jasra | 01 |
| 11. | Commercial Banks | Yes | 01 | - | - |
| 12. | Cooperative Society | No | 00 | Jasra | 01 |
| 13. | Existence of Factories | No | 00 | Naini | 02 |
| 14. | Existence of Market/Hat | No | 00 | Jasra | 01 |
| 15. | Existence of P.D.S. | Yes | 02 | -- | - |

Source: Block Office, Jasra, Prayagraj

III.6.: Cultural Profile of the Village:

III.6.1.: Fairs and Festivals:

Other than Holi, Diwali, Durga Pooja during Dushahara was told to be celebrated as main festival in the village. As fairs Dangals are organized on Nag Panchmi and Kite flying on Makar Sankranti in the village.

III.6.2.: Temples / Mosques / Churches

In Khatangiya village, there were total four temples of Lord Shiva, Goddess Durga and Barangbali in the whole of the village. Existence of Mosques and Churches was not at all reported in this village as only Hindus were told to reside in this village.

III.6.3.: Dress and Ornaments

Dhoties were common dresses among gents and ladies both in Khatangiya village. Pants, Shirts among gent youngsters was popular dress. While shalwar shoots among young ladies was the common dress in Khatangiya village. Wearing ornaments and bangles wtc. Was in common habits of all the ladies in the village.

III.6.4: Languages

In the whole of village only Hindi and Awadhi languages were found to be spoken in the village. Few immigrants were told to speak Bagheli (as localdialect).

III.6.5.: Food Habits:

Roughly in the whole of Khatangiya village 60% of the peoples were reported as non-vegetarians and the remaining 40% of the peoples were reported as vegetarians in the village.

III.6.6.; Caste Systems/ Rituals / Untouchability

Caste-wise ceremonies and rituals were told to be performed separately among Brahmins, Kshatriya, Yadavs and Harijans particularly on the occasions of marriages, worships and religious rituals in the village. Untouchability to a little extent was reported in this village.

III.6.7.: Dowry System:

Dowries of all sorts were told to be the serious evil among all the castes of this village. Among highly educated it was reported to be more acute and serious.

III.6.8.: Political Establishments and Openness

Political parties such as B.J.P., S.P., B.S.P. and Congress were popular in the village. But political establishments by the parties were not at all reported in the village. Also none of the four political parties were reported to be open in the village.

III.7.: Others:

III.7.1.: Library

Not a single library of any type was reported in Khatangiya Panchayat village still. Educational levels in the village was deplorably poor since long time.

III.7.2.: I.C.D.S. (Integrated Child Development Service) Centres

In the village as a whole only two Integrated Child Development Service (I.C.D.S.) Centres were established of which only one centre was found working regularly.

III.7.3.: Tube-Wells / Piped Water Supply

Piped water supply through tube-well was made available by the village Pradhan through Gram Panchayat in Khatangiya village.

III.7.4.: Agro-Processing / Mills / Factories

As regards the Agro-Processing units only a small rice-mill was there in the village. Two Atta Chakkies were also reported in the service of villagers in Khatangiya. No factory of any type was reported in the village.

III.7.5.: Play Grounds

There was not any type of play ground available in the whole village.

III.7.6.; Illegal Activities

Nil illegal activities were reported in this village. The village Pradhan was very humble and submissive by nature. The village was small, hence, keeping eyes on each and every event was easier for Pradhan and Panchayat members in the village.

III.7.7.: Government Schemes

MGNEREGA scheme was enacted in the village but work-plans were meagre. One S.H.G. (Self Help Group) of 16 members was reported but it was almost inactive. Yuvak-Mangal-Dal (Y.M.D.) was also formed in the village which was found limited only to organize dangals occasionally and Durga Pooja festival in the village.

III.7.8.: Concurrence and Frequency of Natural Calamities

Droughts and cyclones were very frequent during last few years. No flood was reported as River Yamuna has shifted far away in the north.

III.7.9.: Severity of Damage due to Natural Calamities and Coping Measures:

Droughts and cyclones occur oftenly but damages were never measured by government or any agency and hence no relief measures were provided by any agency. Heat-waves flows every year and poors/weaker sections suffer much from it in the village.

III.7.10.: Adaptation strategies by Government, Non-Government and other Stakeholders

No any agency either government or non-government had been reported to take any adaptive strategy for the relief measures against the natural calamities for the peoples of the village.

III.8.; Uniqueness of the Village

The depth of ground water table in the village as per CGWB survey was reported as 42.61 meters below the ground level. Hand pumps become dry in summer every year in this village. No drainage system was made in the village. Drought occurs more oftenly. The infrastructure was very poor showing backward economy.

Chapter-IV

Social Dynamics

The present chapter mainly deals with the social dynamics in terms of demographic profile of the resurveyed village Khatangiya, age and sex distribution of population in village Khatangiya, distribution of population by age and marital status in the village, birth and death rate by APL/BPL categories and caste/religion of households during 2014-19, distribution of households by family size, population characteristics by caste and religion in the village, educational status by sex, enrolment level of children (aged 6 – 12 years) in schools by caste, sex and type of school during 2018-19, level of reading competency of children (age-group 6 – 12 years) by sex (As per ASER Toolkit test) during 2018-19 level of arithmetic competency of children (age-group 6 – 12 years) by sex (As per ASER Toolkit test) during 2018-19, level of reading competency of children (age-group 6 – 12 years) by caste and school types (As per ASER Toolkit test) during 2018-19, level of arithmetic competency of children (age-group 6 – 12 years) by caste and school types (As per ASER Toolkit test) during 2018-19, food security issues at village level during 2018-19 and pattern of malnutrition among the children (Age-group 6 – 12 years) by caste and sex during 2018-19, which are discussed separately in the following paragraphs:

IV.1.: Demographic Profile of village Khatangiya:

Table-IV-1 indicates that during the last survey in 1964-65 the number of households surveyed were 58. While during current resurvey in 2018-19 the number of households surveyed were 300. Thus, the percentage change in number of households has been enumerated as 417.24% which clarifies that the number of households has increased by more than 400% during the span of 1964-65 to 2018-19 in Khatangiya village. Accordingly the total population increased from 316 in last survey to 1525 in the current resurvey showing a percentage change by 382.59%. The adult population increased from 174 in last survey to 1038 in current resurvey showing 496.55%

change. While, the children (0-6 years) population increased from 60 in last survey to 138 in the current resurvey showing 130% change. The population of scheduled caste increased from 27 in last survey to 103 in the current resurvey showing 281.48% change. Thus, population in Khatangiya village had increased tremendously during the span of 1964-65 to 2018-19. Regarding workers in Khatangiya village, the number of main workers in last survey was enumerated as 110 which increased to 526 in current resurvey showing a percentage change of 378.18%. The number of marginal workers increased from 6 in last survey to 12 in current resurvey showing 100% change. The number of cultivators increased from 37 in last survey to 240 in current survey showing 313.79% change. The number of agricultural labourers increased from 7 in last survey to 39 in current survey showing 457.14% changes. The number of worker in household industries was reported to be nil in Khatangiya village. The number of other workers increased from 2 in last survey to only 3 in current resurvey showing 50% change. While, the number of non-workers increased from 192 in last survey to 579 in current resurvey showing 201.56% change. Therefore, it is evidently clear that the number of main workers, marginal workers and agricultural labourers has increased tremendously during the span of 1964-65 to 2018-19 in Khatangiya village.

As regards the literacy in Khatangiya village, the number of literate persons increased from 68 in the last survey to 862 in the current resurvey showing 1167.65% change. While, the number of illiterate persons was enumerated as 248 in last survey and 663 in the current resurvey showing 167.34% change. Accordingly the literacy percentage increased from 38.62% in the last survey to 68.98% in the current resurvey showing 78.61% change. Thus, beyond the increased number of illiterates still remained in village Khatangiya, the literacy percentage has increased considerably. The related data are contained in Table-IV-1.

Table-IV-1
Demographic profile of the village Khatangiya

| Particulars | In 1964-65 (during last survey) | In 2018-2019 (during current survey) | % Change |
|---------------------------------|--|---|-----------------|
| Number of households | 58 | 300 | 417.24 |
| Total Population | 316 | 1525 | 382.59 |
| Adult | 174 | 1038 | 496.55 |
| Child (0-6) | 60 | 138 | 130.00 |
| Scheduled Caste | 27 | 103 | 281.48 |
| Scheduled Tribe | - | - | - |
| Total Workers | - | - | - |
| Main Worker | 110 | 526 | 378.18 |
| Marginal Worker | 6 | 12 | 100.00 |
| Cultivator | 37 | 240 | 313.79 |
| Agricultural Labourer | 7 | 39 | 457.14 |
| Workers in household industries | NA | NA | - |
| Other workers | 2 | 3 | 50.00 |
| Non worker | 192 | 579 | 201.56 |
| Literate population | 68 | 862 | 1167.69 |
| Illiterates population | 248 | 663 | 167.34 |
| Literacy (%) | 38.62 | 68.98 | 78.61 |

Source: Field Survey

IV.2.: Age and Sex Distribution of population in Village Khatangiya

The age and sex distribution of the population in Khatangiya village worked-out in Table-IV-2 shows that on an overall the total population in the last survey was enumerated as 316 which increased to 1525 in the current resurvey. Thus, there was 388.91% change in the population of Khatangiya village. The sex-wise distribution indicates that in the last survey 156 males and 160 females were included in the population. While in the current resurvey the number of males was 814 and females was 711. Thus, the number of males was increased considerably in span of 1964-65 to 2018-19 in Khatangiya village showing reverse changes in sex-ratio.

On the other hand the age-group wise distribution indicates that the increase in the population of age-group of 16-35 years during the last survey was enumerated as 95 (46 males and 49

females), which increased to 665 (369 males and 296 females) during the current resurvey in Khatangiya village. The number of persons in the age-group of 60 and above years increased from 11 during the last survey to 67 during the current resurvey in Khatangiya village. Thus, the maximum increase (600%) was seen among the persons in the age-group of 16-35 years against the minimum increase (152.27%) among the children of 1-5 age-group in Khatangiya village. The related information are contained in the Table-IV-2.

Table-IV-2
Age and sex distribution of the population in the village Khatangiya

(%)

| Age Groups | In 1964-65 (during last survey) | | | In 2018-19 During Current Survey | | | % Change |
|--------------|------------------------------------|--------|-------|-------------------------------------|--------|-------|----------|
| | Male | Female | Total | Male | Female | Total | |
| 0-1 | NA | NA | NA | 18 | 10 | 28 | 0 |
| 1-5 | 17 | 27 | 44 | 49 | 62 | 111 | 152.27 |
| 6-15 | 49 | 38 | 87 | 150 | 131 | 281 | 222.99 |
| 16-35 | 46 | 44 | 95 | 369 | 296 | 665 | 600.00 |
| 36-55 | 28 | 36 | 64 | 163 | 149 | 312 | 387.50 |
| 56 -60 | 9 | 6 | 15 | 28 | 33 | 61 | 366.67 |
| 60 and above | 7 | 4 | 11 | 37 | 30 | 67 | 509.00 |
| Total | 156 | 160 | 316 | 814 | 711 | 1525 | 388.59 |

IV.3.: Distribution of Population by Age and Marital Status in Khatangiya Village

Table-IV-3 indicates that the number of married persons during the last survey was found to be comparatively higher in the age-groups of 11-15 years and 16-20 years enumerated as 23 and 28 respectively. While during the current resurvey, the number of married persons in the age-groups of 11-15 years and 16-20 years was found to be only 2 and 20 respectively. This fact very clearly shows that during the span of last survey the child marriages were very much common which confirms the backwardness of Khatangiya village. While during the span of current resurvey the number of married persons increased from 110 in the age-group of 21-25 years to 537 in age-group of 31 and above years. Thus, it was confirmed that during the current resurvey period the

marriages were carried-out among the grown-up persons. The number of unmarried persons increased from 133 during the last survey to 685 during the current resurvey in Khatangiya village. The number of widowers during the current resurvey period was 39 against 0 during the last survey in Khatangiya village. The concerned informations are given in Table-IV-3.

Table-IV-3
Distribution of population by age and martial status in the village Khatangiya
(Nos)

| Age Groups (years) | In 1964-65 (during last survey) | | | | In 2018-19 During Current Survey | | | |
|-----------------------|------------------------------------|-----------|----------|----------------------|-------------------------------------|-----------|----------|----------------------|
| | Married | Unmarried | Widow/er | Divorced & others | Married | Unmarried | Widow/er | Divorced & others |
| 0-10 | 2 | 87 | - | - | - | 310 | - | - |
| 11-15 | 23 | 3 | - | - | 2 | 108 | - | - |
| 16-20 | 28 | 43 | - | - | 20 | 168 | - | - |
| 21-25 | 28 | 1 | - | - | 110 | 74 | 1 | 1 |
| 26-30 | 21 | - | - | - | 129 | 21 | 1 | - |
| 31 and above | 11 | - | - | - | 537 | 4 | 37 | 2 |
| All age groups | 113 | 133 | - | - | 798 | 685 | 39 | 3 |

Source: Field Survey

IV.4.: Birth rate and Death Rate by APL/BPL Categories and Cast/Religions of Households During 2014-2019.

The birth and death rate by APL/BPL categories and caste/religion of the households of Khatangiya village during 2014-2019 worked-out in the Table-IV-4 shows that on an overall the number of births in all the categories was enumerated as 76, of which the maximum i.e. 52 were reported among the BPLs against the minimum i.e. 24 among the APL category. The caste/religion wise distribution shows that the maximum, i.e., 41 births were reported among scheduled castes wherein, the maximum, i.e. 39 were among BPLs and only 2 among the APLs. In the category of OBCs, the total births were reported as 23 of which 12 were under BPLs and 11 were APLs. While, in general category the total births were reported as 12 during 2014-2019 of which the maximum i.e. 11 were APLs and only 1 was BPL. Thus, the highest number of

births were reported in the BPL category of Scheduled caste who were the most backward in the Khatangiya village.

On the other hand on an overall the total number of deaths in all categories was enumerated as 27 during the span of last 5 years i.e. 2014-2019 in Khatangiya village of which 15 were reported among BPLs and 12 among the APLs. The caste-wise distribution shows that among general castes the total deaths were reported as 10 and all were among APLs. In BOCs the total deaths were reported as 7 of which the maximum i.e. 6 were among BPLs and only 1 was APL. While in the category of scheduled castes the total deaths were reported as 10 of which the maximum i.e. 9 were among BPLs and only 1 in APL. Thus, the deaths were reported maximum in the castes of general category as well as Scheduled castes. The related data are given in Table-IV-4.

Table-IV-4
Birth rate and death rate by APL/BPL categories and Caste/Religion of households during 2014-2019

| Particulars | Numbers of births/household | | | Numbers of deaths/household | | |
|---------------------------|-----------------------------|-----|---------|-----------------------------|-----|---------|
| | APL | BPL | Overall | APL | BPL | Overall |
| General Caste/Caste Hindu | 11 | 1 | 12 | 10 | - | 10 |
| OBC) | 11 | 12 | 23 | 1 | 6 | 7 |
| Scheduled Caste | 2 | 39 | 41 | 1 | 9 | 10 |
| Scheduled Tribe | - | - | - | - | - | - |
| Minorities | - | - | - | - | - | - |
| All Categories | 24 | 52 | 76 | 12 | 15 | 27 |

Source: Field Survey

IV.5.: Distribution of Households by Family Size

Table-IV-5 shows that on an overall the number of total persons enumerated among the total 58 sample households during the last survey were 316. While during the current resurvey period the number of total persons enumerated among the total 300 sample households were 1525. Thus, the number of persons has increased in proportion of the increase in the number of the households from the last survey to the current resurvey in Khatangiya village. The analysis on

number of persons as well as households according to family size during the last survey and the current resurvey shows that during the last survey period the number of households were enumerated as maximum i.e. 12 with highest family size of 9 having the highest i.e. 108 persons showing highest i.e. 34.18% of the total number of persons. While during the current resurvey period the higher number of households i.e. 72 with 5 and 6 family size having 360 and 432 number of persons showing the highest percentages of 23.61% and 28.33% of the total number of persons. Therefore, it has been evidently clear that during the last survey period the number of persons was higher in the households having large family size of 9 members. While, during the current resurvey period the number of persons has been higher among the households having 5 and 6 members of family size. This confirms that family size has been restricted to limited number of members during the current resurvey period in Khatangiya village. The related data are contained in Table-IV-5.

Table-IV-5
Distribution of households by family size

| Family size | In 1964-65 (during last survey) | | | | In 2018-19 During current resurvey | | | |
|-------------|------------------------------------|------------|----------------|------------|---------------------------------------|------------|----------------|------------|
| | No. of households | % of total | No. of persons | % of total | No. of households | % of total | No. of persons | % of total |
| 1 | 5 | 8.62 | 5 | 1.58 | 3 | 1.00 | 3 | 0.20 |
| 2 | 6 | 10.34 | 12 | 3.80 | 10 | 3.33 | 20 | 1.31 |
| 3 | 10 | 17.24 | 30 | 4.49 | 30 | 10.00 | 90 | 5.90 |
| 4 | 4 | 6.90 | 16 | 5.06 | 63 | 21.00 | 252 | 16.52 |
| 5 | 1 | 1.73 | 5 | 1.58 | 72 | 24.00 | 360 | 23.61 |
| 6 | 8 | 13.79 | 48 | 15.19 | 72 | 24.00 | 432 | 28.33 |
| 7 | 4 | 6.90 | 28 | 8.86 | 37 | 12.33 | 259 | 16.98 |
| 8 | 8 | 13.79 | 64 | 20.26 | 8 | 2.67 | 64 | 4.20 |
| 9 | 12 | 20.69 | 108 | 34.18 | 5 | 1.67 | 45 | 2.95 |
| 10 & above | - | - | - | - | - | - | - | - |
| Total | 58 | 100 | 315 | 100 | 300 | 100 | 1525 | 100 |

Source: Field Survey

IV.6.: Population Characteristics by Castes and Religions in Khatangiya Village

The population characteristics by castes and religions in Khatangiya village analysed in Table-IV-6 shows that on an overall the total population during the last survey in the village Khatangiya was enumerated as 316 of which 156 were males and 160 were females. Thus, the sex-ratio during the last survey was estimated as 97.50%. Accordingly the average size of households was estimated as 5.44 members per household. The caste-wise analysis shows that the total population was higher i.e. 121 among general caste against lower i.e. 93 among OBCs. Accordingly the sex-ratio was found to be highest i.e. 98.36% among general caste against the lowest i.e. 96.15% among scheduled castes during the last survey period. While the average size of households was largest i.e. 8.64 among general caste against the smallest i.e. 3.44 among the OBCs. Thus, the households of general castes had larger size of numbers in Khatangiya village.

While during the current resurvey the total population was enumerated as 1525 of which 809 were males and 716 were females. Thus, the sex-ratio was estimated as 112.99% in Khatangiya village and the average size of households was estimated as 5.08 members per household. The caste-wise analysis shows that out of the total population of 1525 the maximum i.e. 621 were shared by OBCs. Accordingly the sex-ratio was higher i.e. 116.38% among OBCs against the lower i.e. 109.50 among the scheduled castes. While the average size of households was estimated to be the larger i.e. 5.17 per household among OBCs against the smaller i.e. 2.24 members per household among the general castes in Khatangiya village. The related data are contained in Table-IV-6.

Table-IV-6
Population characteristics by Caste and Religions in the village Khatangiya
 (%)

| Age Groups | In 1964-65 (during last survey) | | | | | In 2018-19 During current resurvey | | | | |
|-----------------------------|------------------------------------|--------|-------|-------------|----------------------------|---------------------------------------|--------|-------|-------------|----------------------------|
| | Male | Female | Total | Sex ratio % | Average size of households | Male | Female | Total | Sex ratio % | Average size of households |
| Caste Hindu | 60 | 61 | 121 | 98.36 | 8.64 | 210 | 189 | 397 | 112.30 | 2.24 |
| Scheduled Caste | 50 | 52 | 102 | 96.15 | 6.00 | 265 | 242 | 507 | 109.50 | 4.92 |
| Scheduled Tribe | - | - | - | - | - | - | - | - | - | - |
| OBC | 46 | 47 | 93 | 97.87 | 3.44 | 334 | 287 | 621 | 116.38 | 5.17 |
| Minorities (Muslim) | - | - | - | - | - | - | - | - | - | - |
| Minorities (Others specify) | - | - | - | - | - | - | - | - | - | - |
| Others | - | - | - | - | - | - | - | - | - | - |
| Total | 156 | 160 | 316 | 97.50 | 5.44 | 809 | 716 | 1525 | 112.99 | 5.08 |

Source: Field Survey

IV.7.: Enrolment level of Children (Aged 6-12 years) in Schools by caste, sex and type of Schools During 2018-2019 in Khatangiya Village

Table-IV-7 shows that on an overall 35 children were enrolled in government vernacular school and 2 children were enrolled in private vernacular school from general castes in Khatangiya village during 2018-2019. Thus, about 95% of children from general castes were enrolled in Govt. vernacular school. Only 7 children from Scheduled castes were enrolled only in the Govt. vernacular school and from OBCs the maximum i.e. 48 children were reported to be enrolled in Govt. vernacular school in Khatangiya village during 2018-2019. In Khatangiya village not a single English Medium School was reported in the village. Also minorities and other castes were not at all reported in the village. Only Hindus were there in the village.

The sex-wise distribution of the enrolment level of children in the schools of Khatangiya village shows that among the male children from general caste 21 children were enrolled in Government vernacular school and only one in private vernacular school. From Scheduled caste only 6 children were enrolled in only govt. vernacular school and from OBCs 19 children in Govt. School and 2 children in private school were enrolled during 2018-2019. While in case of female

children from general caste 14 children were enrolled in Govt. school and only 1 in private school. From Scheduled caste only 1 children was enrolled in Govt. School only and from OBCs the maximum 29 children were enrolled in Govt. School and 6 children in private vernacular school were enrolled in Khatangiya village during 2018-2019. Thus, majority of both male as well as female children were enrolled in Govt. vernacular school in Khatangiya village. The related data are given in Table-IV-7.

Table-IV-7
Enrolment level of children (aged 5-15 years) in schools by caste, sex and type of school

(%)

| Children categories | Govt. school | Private school | Total |
|---------------------|---------------|----------------|-------|
| | Vernacular | Vernacular | |
| Male Children | | | 100 |
| Caste Gen. | 21 (95.00) | 1 (5.00) | 100 |
| Scheduled Caste | 6 (100.00) | - | 100 |
| Scheduled Tribe | - | - | 100 |
| OBC | 19 (90.48) | 2 (9.52) | 100 |
| Minorities | - | - | 100 |
| Female Children | | | 100 |
| Caste Gen. | 14 (95.00) | 1 (5.00) | 100 |
| Scheduled Caste | 1 (100.00) | - | 100 |
| Scheduled Tribe | - | - | 100 |
| OBC | 29 (82.86) | 6 (17.14) | 100 |
| Minorities | - | - | 100 |
| All Children | | | 100 |
| Caste Gen. | 35 (94.59) | 2 (5.41) | 100 |
| Scheduled Caste | 7 (100.00) | - | 100 |
| Scheduled Tribe | - | - | 100 |
| OBC | 48 (85.71) | 8 (14.29) | 100 |
| Minorities | - | - | 100 |

Source: Field Survey

IV.8(a): Educational Status by Sex in Khatangiya Village

Table-IV-8(a) indicates that during the last survey out of the total 89 male adults, 55 were reported as illiterates, 13 were primary passed and 21 secondary passed. Thus, among male adults 62% were illiterates, 15% were primary and about 23% were secondary passed. While among females out of 85 females 84 were illiterates and only one was primary passed. During the current resurvey out of 813 males, 195 were illiterates 190 were primary, 194 were secondary, 122 were intermediate, 3 were technical, 103 graduates and only 6 were post graduate and professionals in Khatangiya village. While among the 712 females, 278 were illiterates, 170 were primary passed, 144 were secondary, 58 were intermediate, 1 was technical, 58 were graduates and 3 were post graduates. Thus, educational status among both males as well as females has been improved considerably during the current resurvey period in Khatangiya village. The related data are contained in Table-IV-8(a).

Table-IV-8(a)
Educational status by sex in Khatangiya Village

| Educational Status | In 1964-65 (during last survey) | | | | In 2018-19 During current resurvey | | | |
|-----------------------------------|------------------------------------|---------------|-----------------|---------------|---------------------------------------|---------------|-----------------|---------------|
| | No. of male | % of total | No of female | % of total | No. of male | % of total | No of female | % of total |
| Illiterate | 55 | 61.80 | 84 | 98.95 | 195 | 23.98 | 278 | 39.04 |
| Literates | - | | | | | | | |
| Able only to read or write | - | - | - | - | - | - | - | - |
| Upto Primary | 13 | 14.70 | 1 | 1.05 | 190 | 23.37 | 170 | 23.88 |
| Upto Secondary | 21 | 23.59 | - | - | 194 | 23.86 | 144 | 20.22 |
| Upto Intermediate | - | - | - | - | 122 | 15.01 | 58 | 8.15 |
| Technical | - | - | - | - | 3 | 0.37 | 1 | 0.14 |
| Graduates | - | - | - | - | 103 | 12.67 | 58 | 8.15 |
| Post graduates & professionals | - | - | - | - | 6 | 0.74 | 3 | 0.42 |
| Total | 89 | 100 | 85 | 100 | 813 | 100 | 712 | 100 |

Source: Field Survey

IV.8(b).: Level of Reading Competency of Children (Age-Group 6-12 years) by Sex (As per ASER Toolkit Test) During 2018-2019.

Tables-IV-8(b) indicates that among boys in standard -I it was found that 71% can recognize letter, 73% can recognize words, 72% can read simple sentence and 73% can read paragraphs. While among girls 57% can recognize letters, 60% can recognize words, 59% can read simple sentence and 58% can read paragraphs. Thus, reading competency among girls was comparatively poor among the children of Khatangiya village. In standard -II the reading competency among girls varied between 60-62% as compared to boys where it varied between 40-43%. Therefore, in Standard-II reading competency was comparatively superior among girls. In standard-III, it varied between 50-56% among both boys as well as girls. But in standard-IV among boys the reading competency varied from 56-60% and among girls it varied from 53-54%. In standard-V among boys it varied from 57.48% to 59.40% and among girls it varied from 52.40% to 54.15%. Thus, among boys it was superior. In standard-VI among boys it varied from 92 to 94% and among girls it varied from 85 to 87%. Thus, on an overall reading competency among boys was comparatively of higher level. The related data are contained in Table-IV-8(b)

Table-IV-8(b)
Level of reading competency of children (age group 6-12 years) by sex (As per ASER Toolkit test) during 2018-2019

(% of total in particular category)

| Class of study | Boys | | | | | Girls | | | | |
|----------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 |
| Pre school | - | - | - | - | - | - | - | - | - | - |
| Standard-I | - | 71.00 | 73.00 | 71.50 | 72.50 | - | 57.10 | 59.90 | 58.90 | 57.90 |
| Standard-I I | - | 45.00 | 44.90 | 45.65 | 46.05 | - | 62.00 | 60.00 | 61.00 | 60.05 |
| Standard-III | - | 56.10 | 55.00 | 55.50 | 54.90 | - | 57.00 | 50.10 | 55.60 | 50.70 |
| Standard-IV | - | 59.00 | 58.70 | 56.04 | 59.90 | - | 52.90 | 54.10 | 53.00 | 53.90 |
| Standard-V | - | 57.98 | 58.60 | 58.75 | 59.40 | - | 53.00 | 54.15 | 52.40 | 53.60 |
| Standard-VI | - | 92.00 | 93.00 | 91.85 | 93.90 | - | 87.00 | 86.65 | 86.75 | 85.90 |
| Standard-VII | - | - | - | - | - | - | - | - | - | - |
| Standard-VIII | - | - | - | - | - | - | - | - | - | - |
| Standard-IX | - | - | - | - | - | - | - | - | - | - |
| Standard-X | - | - | - | - | - | - | - | - | - | - |
| All | - | - | - | - | - | - | - | - | - | - |

Levels: 0=Nothing; 1=Can recognise letters; 2=Can recognise words; 3=Can read simple sentence; 4=Can read paragraphs

IV.8(c): Level of Arithmetic Competency of Children (Age-Group 6-12 years) by Sex (As Per ASER Toolkit Test) During 2018-2019

Table-IV-8(c) shows that the level of arithmetic competency among boys of standard-I varied from 70-72% and among girls it varied from 56-57% showing boys superior than girls. In standard-II among girls it varied from 54-58% and among boys it varied from 40-43% showing girls to be superior than boys. But in standard-III among boys it varied from 53 to 56% and among girls it varied from 46.85 – 48%. Thus, in standard-III boys were comparatively superior. In standard-IV among boys it varied from 66-67% and among girls it varied from 52 to 56% showing boys to be superior than girls. But in standard-V it varied from 71 to 72% among girls and among boys it from 54-57%. Thus, in standard-V girls were superior than boys. In standard-VI among boys it varied from 89 to 92% and among girls it varied from 87.60 to 89.40%. Thus, in standard-VI boys were comparatively superior than girls. Therefore, in case of the level of arithmetic competency among children of Khatangiya village it was found that in one standard boys were superior and in other standard girls were better. The related data are contained in Table-IV-8(c).

Table-IV-8(c)
Level of arithmetic competency of children (age group 6-12 years) by sex (As per ASER Toolkit test) during 2018-19

(% of total in particular category)

| Class of study | Boys | | | | | Girls | | | | |
|----------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 |
| Pre school | - | - | - | - | - | - | - | - | - | - |
| Standard-I | - | 70.00 | 72.00 | 70.90 | 72.10 | - | 57.00 | 56.00 | 55.90 | 56.85 |
| Standard-II | - | 42.00 | 43.00 | 40.00 | 41.90 | - | 55.00 | 56.00 | 58.00 | 54.15 |
| Standard-III | - | 55.00 | 56.00 | 53.10 | 63.90 | - | 48.00 | 47.00 | 46.85 | 48.45 |
| Standard-IV | - | 67.00 | 66.00 | 65.90 | 67.10 | - | 54.00 | 55.00 | 52.00 | 56.00 |
| Standard-V | - | 55.00 | 57.00 | 54.60 | 54.00 | - | 70.90 | 71.00 | 72.00 | 70.60 |
| Standard-VI | - | 90.00 | 91.00 | 89.50 | 89.00 | - | 88.00 | 82.60 | 89.40 | 88.00 |
| Standard-VII | - | - | - | - | - | - | - | - | - | - |
| Standard-VIII | - | - | - | - | - | - | - | - | - | - |
| Standard-IX | - | - | - | - | - | - | - | - | - | - |
| Standard-X | - | - | - | - | - | - | - | - | - | - |
| All | - | - | - | - | - | - | - | - | - | - |

Levels: 0=Nothing; 1=Can recognise numbers (0-9); 2=Can recognise numbers (10-99); 3=Can do simple subtraction; 4=Can do simple division

IV.8(d).: Level of Reading Competency of Children (Age-Group 6-12 years) by Caste and School Types (As Per ASER Toolkit Test) During 2018-2019

Table-IV-8(d) indicates that on an overall the level of reading competency among all the children of general caste in government school varied from 59.93 to 60.55% for recognizing letter to reading paragraphs and in private school it varied from 85.95 to 86.50%. In case of scheduled caste children in Govt. school it carried from 64.80 to 66.70%. In private school not a single children of scheduled caste was enrolled. In case of OBCs in private school it varied from 75 - 76.98% and in govt. school it varied from 54.65 to 60.35% showing the level of reading competency superior in private school than that in the govt. school on an overall.

The sex-wise distribution among castes and types of schools shows that among male children in case of general caste in govt. school it varied from 59.95 to 61.05% and in private school it varied from 89 – 91%. In case of scheduled caste in govt. school it varied from 50 – 52%. In case of OBCs in govt. school it varied from 54.90 to 55.30% and in private school it varied from 66 – 68% showing private school superior than govt. school. While in case of females of general caste in private school it varied from 81-90 to 83.00% and in government school it varied from 59.90 to 61.00%. In case of scheduled caste in government school it varied from 79.60 to 81.00%. in case of OBCs in private school it varied from 83.85 to 84.10% and in government school it varied from 54.90 to 56.00%. Thus, it is safely concluded that level of reading competency among the children of private school was much better as compared to that in government school on an overall in Khatangiya village during 2018-2019. The related data are contained in Table-IV-8(d).

Table-IV-8(d)**Level of reading competency of children (age group 6-12 years) by caste and school types
(As per ASER Toolkit test) during 2018-19***(% of total in particular category)*

| Categories of students | Government school | | | | | Private School | | | | |
|------------------------|-------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 |
| Male | | | | | | | | | | |
| Caste Gen. | - | 60.00 | 61.05 | 59.95 | 61.00 | - | 89.00 | 91.00 | 90.00 | 90.10 |
| Scheduled Caste | - | 50.00 | 52.00 | 51.00 | 51.10 | - | - | - | - | - |
| Scheduled Tribe | - | - | - | - | - | - | - | - | - | - |
| OBC | - | 54.90 | 55.01 | 65.70 | 55.00 | - | 66.00 | 67.00 | 68.00 | 67.50 |
| Minorities | - | - | - | - | - | - | - | - | - | - |
| Female | | | | | | | | | | |
| Caste Gen. | - | 61.00 | 60.00 | 59.90 | 60.10 | - | 83.00 | 82.00 | 81.90 | 82.10 |
| Scheduled Caste | - | 79.60 | 81.40 | 80.00 | 80.30 | - | - | - | - | - |
| Scheduled Tribe | - | - | - | - | - | - | - | - | - | - |
| OBC | - | 56.00 | 55.00 | 54.90 | 55.80 | - | 84.10 | 83.90 | 84.60 | 83.85 |
| Minorities | - | - | - | - | - | - | - | - | - | - |
| All children | | | | | | | | | | |
| Caste Gen. | - | 60.50 | 60.50 | 59.93 | 60.55 | - | 86.00 | 86.50 | 85.95 | 86.10 |
| Scheduled Caste | - | 64.80 | 66.70 | 65.50 | 65.70 | - | - | - | - | - |
| Scheduled Tribe | - | - | - | - | - | - | - | - | - | - |
| OBC | - | 55.45 | 55.05 | 54.65 | 60.35 | - | 75.00 | 75.45 | 76.98 | 76.80 |
| Minorities | - | - | - | - | - | - | - | - | - | - |

Levels: 0=Nothing; 1=Can recognise letters; 2=Can recognise words; 3=Can read simple sentence; 4=Can read paragraphs

IV.8(e).: Level of Arithmetic Competency of Children (Age-Group 6-12 years) by Caste and School Types (As Per ASER Toolkit Test) During 2018-2019

Table-IV-8(e) shows that on an overall among all the children of various categories it was found that in case of general caste in private school for recognizing numbers to subtraction and division it varied from 83 to 84.50% and in government school it varied from 60.50 to 62.05%. In case of scheduled caste in government school it varied from 62.50 to 64.20%. In case of OBCs in private school it varied from 65.00 to 75.98% and in government school it varied from 53 to 54%. Thus, on an overall it is evidently clear that the level of arithmetic competency among children of all

the categories was comparatively higher in case of private school in comparison of government school in Khatangiya village during 2018-2019.

The sex-wise distribution shows that among male children of general caste in private school the level of arithmetic competency varied from 84 to 85.50% and in government school it varied from 61 to 64%. In case of scheduled caste in government school it varied from 50 to 52%. In case of OBCs in private school it varied from 66.50 to 68% and government school it varied from 52.40 to 54%. Thus, it is clear that in private school the level of arithmetic competency among the male children was comparatively superior in all categories. While among females in case of general and OBCs it was superior in private school. But in case of scheduled caste it was superior in government school. Thus, it is safely concluded that level of arithmetic competency was better in the children of private schools. The related data are contained in Table-IV-8(e).

Table-IV-8(e)
Level of arithmetic competency of children (age group 6-12 years) by caste and school types (As per ASER Toolkit test) during 2018-19
 (% of total in particular category)

| Categories of students | Government school | | | | | Private School | | | | |
|------------------------|-------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 |
| Male | | | | | | | | | | |
| Caste Gen. | - | 62.00 | 63.00 | 64.00 | 61.00 | - | 84.50 | 85.50 | 85.00 | 84.00 |
| Scheduled Caste | - | 51.00 | 52.00 | 50.00 | 51.00 | - | - | - | - | - |
| Scheduled Tribe | - | - | - | - | - | - | - | - | - | - |
| OBC | - | 54.00 | 53.00 | 52.90 | 54.00 | - | 68.00 | 67.00 | 66.50 | 67.50 |
| Minorities | - | - | - | - | - | - | - | - | - | - |
| Female | | | | | | | | | | |
| Caste Gen. | - | 59.00 | 58.90 | 60.10 | 60.00 | - | 86.00 | 85.00 | 84.00 | 85.90 |
| Scheduled Caste | - | 76.00 | 74.00 | 75.00 | 75.50 | - | - | - | - | - |
| Scheduled Tribe | - | - | - | - | - | - | - | - | - | - |
| OBC | - | 54.00 | 53.00 | 55.00 | 54.00 | - | 82.00 | 83.00 | 81.00 | 82.00 |
| Minorities | - | - | - | - | - | - | - | - | - | - |
| All children | | | | | | | | | | |
| Caste Gen. | - | 60.50 | 60.95 | 62.05 | 60.50 | - | 83.25 | 83.00 | 84.50 | 84.95 |
| Scheduled Caste | - | 64.20 | 63.00 | 62.50 | 63.25 | - | - | - | - | - |
| Scheduled Tribe | - | - | - | - | - | - | - | - | - | - |
| OBC | - | 54.00 | 53.00 | 53.95 | 54.00 | - | 75.00 | 65.00 | 73.50 | 75.98 |
| Minorities | - | - | - | - | - | - | - | - | - | - |

Levels: 0=Nothing; 1=Can recognise numbers (0-9); 2=Can recognise numbers (10-99); 3=Can do simple subtraction; 4=Can do simple division

IV.9(a).: Food Security Issues at Village Level During 2018-2019

Table-IV-9(a) shows that 79% of respondents told that during last 12 months not a single member of their households went without eating any day due to poverty, 1% told rarely, 16.33% told sometimes, 3.67% told oftenly. Thus, majority were not facing acute poverty. Also 76.67% of respondents said that they never slept hungry due to lack of food, 0.67% said rarely, 5.66% said sometimes and 17% said often. 50.67% responded that they never worried not to have enough food, 48% sometimes and 1.33% said oftenly. Thus, more than 50% responded not to worried ever for food. 91% responded to take kind of food they preferred, 4% said rarely, 5% said sometimes 11% told that they never offered food to their neighbours and guests 15% said rarely and 72% said sometimes. 94.33% of respondents told never to eat out-side in hotel, 2% said rarely and 3.67% said sometimes. 14.33% responded that they never ate extra, 43% said rarely and 42.67% said sometimes. Thus, food was satisfactory in Khatangiya village. The related data are contained in Table-IV-9(a).

Table-IV-9(a)
Food security issues at village level during 2018-19

| During last 12 months any member of the household | (% of respondents) | | | | Total |
|---|--------------------|--------|-----------|-------|-------|
| | Never | Rarely | Sometimes | Often | |
| a. Went a whole day and night without eating due to poverty? | 79.00 | 1.00 | 16.33 | 3.67 | 100 |
| b. Went to sleep hungry due to inability to purchase food? | 76.67 | 0.67 | 5.66 | 17.00 | 100 |
| c. Ever worried that the households would not have enough food? | 50.67 | - | 48.00 | 1.33 | 100 |
| d. Ate some poor quality foods that you really did not like? | - | - | - | - | 100 |
| e. Were not able to eat the kind of food you preferred? | 91.00 | 4.00 | 5.00 | - | 100 |
| f. Did you offered food to your neighbors and guests? | 11.0 | 15.00 | 72.00 | - | 100 |
| g. Went for outside eating in hotel/restaurant? | 94.33 | 2.00 | 3.67 | - | 100 |
| h. Are you eating too much packed food/purchased food like ice-cream, cold-drinks, etc? | 14.33 | 43.00 | 42.67 | - | 100 |

Source: Field Survey

IV.9(b).: Pattern of Malnutrition Among the Children (Age-Group 6-12 years) by Castes and Sex During 2018-2019.

Table-IV-9(b) shows that on an overall total 39 children were enumerated from general caste wherein 31 (97.49%) were found severely underweight, 6 (15.38%) were under weight and 2 (5.13%) were found normal BMI category i.e. 18.5 to 25 kg/m². From scheduled caste only 7 children were there who were found severely under weight. From OBCs total 54 children were there wherein 52 (96.30%) were severely under weight, 1 (1.85%) was found under weight and 1 (1.85%) was found in normal BMI category. Thus, majority of children were found severely under weight and a considerable number of children were found under weight. While only 3 children were found to be of normal category of BMI in Khatangiya village.

The sex-wise analysis shows that among total 44 males children it was found that from general caste there were 19 children, wherein 15 (78.95%) were found severely underweight, 3 (15.75%) were underweight and only 1 (5.26%) was found to be of normal BMI category. From scheduled caste 6 children were there and all were severely underweight. From OBCs out of 19 children 18 (94.74%) were severely underweight and the remaining 1 (5.26%) was found of underweight BMI category. Thus, among male children also majority were in severely underweight category of BMI.

Among the total 56 female children it was found that from general caste there were 20 children of which 16 (80%) were severely underweight, 3 (15%) were underweight and 1(5%) was of normal BMI category. From scheduled caste there was only 1 children who was found to be severely underweight. From OBCs out of total 35 children, 34 (97.14%) were severely underweight an 1 (2.86%) was of normal BMI category. Thus, among female children too majority were severely underweight in Khatangiya village. The related data contained in Table-IV-9(b).

Table-IV-9(b)
Pattern of malnutrition among the children (age group 6-12 years) by castes and sex
during 2018-2019

(Number of children and % in particular category)

| Categories of children | Severely underweight | Underweight | Normal | Overweight | Obesity | Total |
|------------------------|----------------------|--------------|-------------|------------|---------|----------------|
| Male Children | | | | | | |
| Caste Gen. | 15 (78.15) | 3 (15.79) | 1 (5.26) | - | - | 19 (100.00) |
| Scheduled Caste | 6 (100.00) | - | - | - | - | 6 (100.00) |
| Scheduled Tribe | - | - | - | - | - | - |
| OBC | 18 (94.74) | 1 (5.26) | - | - | - | 19 (100.00) |
| Minorities | - | - | - | - | - | - |
| Female Children | | | | | | |
| Caste Gen. | 16 (80.00) | 3 (15.00) | 1 (5.00) | - | - | 20 (100.00) |
| Scheduled Caste | 1 (100.00) | - | - | - | - | 1 (100.00) |
| Scheduled Tribe | - | - | - | - | - | - |
| OBC | 34 (97.14) | - | 1 (2.86) | - | - | 35 (100.00) |
| Minorities | - | - | - | - | - | - |
| Overall | | | | | | |
| Caste Gen. | 31 (97.49) | 6 (15.38) | 8 (5.13) | - | - | 39 (100.00) |
| Scheduled Caste | 7 (100.00) | - | - | - | - | 7 (100.00) |
| Scheduled Tribe | - | - | - | - | - | - |
| OBC | 52 (96.30) | 1 (1.85) | 1 (1.85) | - | - | 54 (100.00) |
| Minorities | - | - | - | - | - | - |

BMI categories for children (kg/m²): Severely underweight= less than 16.5; Underweight=16.5 to less than 18.5; Normal=18.5 to less than 25; Overweight=25 to less than 30; Obesity=30 and above

Chapter-V

Economic Status

This chapter mainly deals with the occupations/livelihoods and employment pattern, extent of migration, agrarian status, land holdings, basic characteristics of farm households, cropping pattern, nature and extent of crop diversification, yield of major crops, profitability of major crops, disposal of major farm produces and price realization, composition of annual income of households by livelihood groups and income sources which are discussed in the following paragraphs in detail:

V.1.: Livelihoods / Occupations and Employment Pattern

V.1.1.: Distribution of Households by Livelihoods / Occupations During 2018-2019

The distribution of households by livelihood groups and castes analysed in Table-V-1.1 indicates that on an overall the number of households enumerated was 300 of which the maximum i.e. 130 were reported as OBCs, 79 were scheduled castes and 91 were of general castes. Thus, in the whole village Khatangiya OBCs were dominating castes covering 43.34%, SCs 26.33% and general castes covered 30.33%. The livelihood group-wise distribution shows that the total number of cultivating households (cultivators) was accounted as 240 of which the maximum i.e. 113 (47%) were OBCs, 76 (31.67%) were of general castes and the remaining 51 (21.25%) were SCs. The number of agricultural labourers was enumerated as 16 of which the maximum i.e. 14 (87.50%) were from SCs and only 2 (12.50%) were OBCs. The households adopting Dairying were 2 of which 1 was OBC and the other was SC. The Govt. salaried households were 9 of which 4 (44.44%) were OBCs, 3 (33.33%) were of general castes and 2 (22.22%) were SCs. The private salaried households were 21 of which 8 (38.10%) were from general castes, 7 (33.33%) were SCs and 6 (28.51%) were OBCs. There were 2 pensioners of which 1 was OBC and the other was from general caste. There was 1 business household from general caste. There were 8 casual labourers of which 3 (37.50%) were OBCs, 3 (37.50%) were SCs and 2 (25.00%) were from general castes. There was 1 marginal labour too in Khatangiya village. Thus, among the OBCs and general caste majority were the cultivators and in the village as a whole OBCs were the dominating households in Khatangiya village. The percentage distribution of households by

livelihoods/ occupation groups has been recalculated and included the last column of Table-V-1.1 which indicates that among the total households the maximum, i.e. 80% were cultivators, 7% were private salaried households, 5.3% were agricultural labourers, 3% were Government salaried households, 2.7% were casual labourers and the rest were pensioners, businessman and marginal labourers in the Khatangiya Village. Thus, Khatangiya village was dominated by farmers by occupation .The related data are given in Table-V-1.1.

Table-V-1.1
Distribution of households by occupations/livelihoods during 2018-19
(No of households & %)

| Livelihood Groups | Caste Hindu (Gen.) | SC | ST | OBC | Minority | All Households | % of Households by Livelihood Groups |
|-------------------------------|--------------------|---------------|----|----------------|----------|-----------------|--------------------------------------|
| Cultivator | 76 (31.67) | 51 (21.25) | - | 113 (47.08) | - | 240 (100.00) | 80 |
| Agricultural labour | - | 14 (81.50) | - | 2 (12.50) | - | 16 (100.00) | 5.3 |
| Dairy/Fishing/Poultry keeping | - | 1 (50.00) | - | 1 (50.00) | - | 2 (100.00) | 0.7 |
| Govt Salaried | 3 (33.33) | 2 (22.22) | - | 4 (44.44) | - | 9 (100.00) | 3.0 |
| Private Salaried | 8 (38.10) | 7 (33.33) | - | 6 (28.57) | - | 21 (100.00) | 7.0 |
| Pensioner | 1 (50.00) | - | - | 1 (50.00) | - | 2 (100.00) | 0.7 |
| Caste based profession | - | - | - | - | - | - | - |
| Trade & business | 1 (100.00) | - | - | - | - | 1 (100.00) | 0.3 |
| Entrepreneur | - | - | - | - | - | - | - |
| Casual labour | 2 (25.00) | 3 (37.50) | - | 3 (37.50) | - | 8 (100.00) | 2.7 |
| Marginal labour | - | 1 (100.00) | - | - | - | 1 (100.00) | 0.3 |
| Household | - | - | - | - | - | - | - |
| Others | - | - | - | - | - | - | - |
| Overall | 91 (30.33) | 79 (26.33) | - | 130 (43.34) | - | 300 (100.00) | 100 |

Note: Based on primary occupation only for households

Source: Field survey

V.1.2.: Distribution of Adult Population by Occupations / Livelihoods During 2018-2019 in Khatangiya

Table-V-1.2 indicates that on an overall the total adult population in the village was enumerated as 634 of which the maximum i.e. 274 (43.22%) were OBCs, 187 (29.50%) were SCs and 173 (27.28%) were from general caste. Thus, majority of adult population belonged to OBCs in Khatangiya. The occupation/livelihood-wise distribution of adult population shows that out of total 634 adults the maximum i.e. 240 adults were from the cultivating households, wherein the maximum i.e. 113 (47.08%) were OBCs, 76 (31.67%) were from general caste and 57 (21.25%) were SCs. Thus, among the cultivators the majority were OBCs who were hardworking and progressive among the adult population. The next occupation was dairying wherein 125 adults were enumerated. Thus, among the adults who had opted dairying the majority were OBCs. Among the casual labourers too the number of adults was enumerated as 96 of which the maximum i.e. 61 (63.54%) were SCs which shows that casual labours were comparatively more poor and economically backward in the village as a whole. Private salaried adults were enumerated as 68 of which the maximum i.e. 31 (45.59%) were from general caste who were labourious in the village. In business occupation total 32 adults were there wherein 15 (46.88%) were general caste and 14 (43.75%) were OBCs, which confirms that in the occupation of business too OBCs had shared equally with general castes adults in the village. The distribution of adult population by livelihood/ occupations has been recalculated and included in the last column of Table-V-1.2 which indicates that the maximum,i.e. 37.9% among the total adult population were enumerated as the cultivators, 19.70% were engaged in rearing animal, 15.14% were casuals labourers, 10.70% were private salaried households, 6.2% were agricultural labourers, 5.04% were businessman and the remaining were pensioners, Government salariedhouseholds, marginal labourers and others. Thus, the majority of adult population were engaged in cultivation, animal rearing, casual labourers and agricultural labourers in Khatangiya village.The related data are given in Table-V-1.2.

Table-V-1.2
Distribution of adult population by occupations/livelihood during 2018-19

(Nos and %)

| Livelihood Groups | Caste Hindu (Gen.) | SC | ST | OBC | Minority | All | % of Adults by livelihood groups |
|-------------------------------|--------------------|----------------|----|----------------|----------|-----------------|----------------------------------|
| Cultivator | 76 (31.63) | 51 (21.25) | - | 113 (47.08) | - | 240 (100.00) | 37.50 |
| Agricultural labour | 1 (2.56) | 23 (58.98) | - | 15 (38.46) | - | 39 (100.00) | 6.20 |
| Dairy/Fishing/Poultry keeping | 39 (31.20) | 21 (16.80) | - | 65 (52.00) | - | 125 (100.00) | 19.70 |
| Govt Salaried | 3 (33.34) | 2 (22.22) | - | 4 (44.44) | - | 9 (100.00) | 1.40 |
| Private Salaried | 31 (45.59) | 16 (22.53) | - | 21 (80.88) | - | 68 (100.00) | 10.70 |
| Pensioner | 5 (62.50) | 1 (12.50) | - | 2 (25.00) | - | 8 (100.00) | 1.26 |
| Caste based profession | - | 1 (50.00) | - | 1 (50.00) | - | 2 (100.00) | 0.30 |
| Trade & business | 15 (46.88) | 3 (9.37) | - | 14 (43.75) | - | 32 (100.00) | 5.04 |
| Entrepreneur | - | - | - | - | - | - | - |
| Casual labour | 1 (1.04) | 61 (63.54) | - | 34 (35.42) | - | 96 (100.00) | 15.14 |
| Marginal labour | 2 (16.67) | 8 (66.66) | - | 2 (16.62) | - | 12 (100.00) | 1.89 |
| Household | - | - | - | - | - | - | - |
| Others | - | - | - | 3 (100.00) | - | 3 (100.00) | 0.47 |
| Overall | 173 (27.28) | 187 (29.50) | - | 274 (43.22) | - | 634 (100.00) | 100 |

Note: Based on occupation of individual adult members, Source: Field survey

V.1.3.: Occupational Distribution of Adult Members by Sex During 2018-2019

The occupational distribution of adult members by sex during 2018-2019 in Khatangiya village worked-out in Table-V-1.3 shows that on an overall the total adult members in the village were 634 of which the maximum i.e. 561 (88.49%) were male adults and only 73 (11.51%) were the female adults. The occupation-wise distribution shows that 240 adult members were from the cultivating households of which the majority 220 (91.67%) were enumerated as male adults and only 20 (8.33%) were females 39 adults were found as agricultural labourers of which the

majority i.e. 36 (92.31%) were males. In dairying too out of 125 adults the maximum i.e. 90 (72%) were males. In salaried adults out of 68 the maximum i.e. 66 were males. Among casual labourers also the maximum 92 (95.83%) of 96 adults were males only. In business too out of 32 the maximum 30 (93.75%) were male adults in the village. Thus, female adults were negligible in all the occupational groups in Khatangiya village. The livelihood group-wise occupational distribution of adult members by sex included and recalculated in the last column of Table-V-1.3 shows that maximum, i.e. 37.9% were from cultivators, 19.7% from animal rearers, 15.14% from casual labourers, 6.7% from agricultural labourers, 10.7% from private salaried households, 5.04% from the businessman and the remaining were from marginal labourers, pensioners and others. Therefore, majority were from cultivators, animal rearers, casual labourers and agricultural labourers in the Khatangiya village. The related data are given in Table-V-1.3.

Table-V-1.3
Occupational distribution of adult members by sex during 2018-19

(Nos and %)

| Livelihood Groups | Male | | Female | | Total | | % of Adults by livelihood groups |
|-------------------------------|---------|--------|---------|-------|---------|--------|----------------------------------|
| | Numbers | % | Numbers | % | Numbers | % | |
| Cultivator | 220 | 91.67 | 20 | 8.33 | 240 | 100.00 | 37.90 |
| Agricultural labour | 36 | 92.31 | 3 | 7.69 | 39 | 100.00 | 6.20 |
| Dairy/Fishing/Poultry keeping | 90 | 72.00 | 35 | 28.00 | 125 | 100.00 | 19.70 |
| Govt Salaried | 6 | 66.67 | 3 | 33.33 | 9 | 100.00 | 1.40 |
| Private Salaried | 66 | 97.06 | 2 | 2.94 | 68 | 100.00 | 10.70 |
| Pensioner | 6 | 75.00 | 2 | 25.00 | 8 | 100.00 | 1.26 |
| Caste based profession | 2 | 100.00 | - | - | 2 | 100.00 | 0.30 |
| Trade & business | 30 | 93.75 | 2 | 6.25 | 32 | 100.00 | 5.04 |
| Entrepreneur | - | - | - | - | - | - | - |
| Casual labour | 92 | 95.83 | 4 | 4.17 | 96 | 100.00 | 15.14 |
| Marginal labour | 10 | 83.33 | 2 | 16.67 | 12 | 100.00 | 1.89 |
| Household | - | - | - | - | - | - | - |
| Others | 3 | 100.00 | - | - | 3 | 100.00 | 0.47 |
| Overall | 561 | 88.49 | 73 | 11.51 | 634 | 100.00 | 100 |

Note: Based on occupation of individual adult members

Source: Field survey

V.1.4.: Extent of Migration by Caste and Economic Status of the Households in Khatangiya

The extent of migration by caste and economic status of the households in Khatangiya analysed in Table-V-1.4 indicates that on an overall in all the economic categories out of the total 300 households the maximum 168 households were enumerated as BPLs and the remaining 132 households were as APLs in the whole village. The caste-wise distribution of economic status of the households shows that in general caste out of the 91 households the maximum 70 households were APLs and 21 households were BPLs. Among OBCs, 118 households were BPLs and 12 households were APLs. While, among the scheduled castes the maximum i.e. 29 out of 79 households were BPLs and only 50 households were APLs. Thus, among the general castes and SCs the number of APLs was comparatively much higher in Khatangiya village. While among the OBCs castes the number of BPLs was very much higher i.e. out of 130 households 118 households were BPLs. Thus, the higher number of APLs in schedule castes. confirms that they were comparatively much better in Khatangiya village.

On the other hand regarding the extent of migration from Khataangiya village on an overall the migration for outside job was reported from only 3 households. From these 3 households migrated, 2 were from general castes and 1 from the OBCs. All the households migrated were APLs where in 66.67% had migrated from general castes and 33.33% from the OBCs only. Thus, the migration was nominal and from the well to do i.e. general and OBCs castes only. The related data are given in Table-V-I.4

Table-V-1.4
Extent of migration by caste and economic status of the Households in Khatangiya

(% of respondents reported migration)

| Particulars | Status of Economic Categories | | | Extent of Migration | | |
|---------------------------|-------------------------------|-----------------|-----------------|---------------------|-----|---------------|
| | APL | BPL | Overall | APL | BPL | Overall |
| General Caste/Caste Hindu | 70 (53.03) | 21 (12.50) | 91 (20.33) | 2 (66.67) | - | 2 (66.67) |
| (OBC) | 12 (9.09) | 118 (70.24) | 130 (43.33) | 1 (33.33) | - | 1 (33.33) |
| Scheduled Caste | 50 (37.88) | 29 (17.26) | 79 (26.34) | - | - | - |
| Scheduled Tribe | - | - | - | - | - | - |
| Minorities | - | - | - | - | - | - |
| All Categories | 132 (100.00) | 168 (100.00) | 300 (100.00) | 3 (100.00) | - | 3 (100.00) |

V.2. – Agrarian Status

V.2.1.- Land-Use Pattern In Village Khatangiya

Land-Use Pattern In Village Khatangiya worked out in table-V-2.1. shows the geographical area in Khatangiya village during the last survey was 571.34 acres which had increased as 574.52 acres in the current resurvey. The net sown area had increased from 186.51 acres in last survey to 375.54 acres in the current resurvey. While the pasture and grazing land in the last survey had decreased from 4.75 area in the last survey to 2.72 acres in current survey. The cultivable waste land had also decreased from 3.18 acres in last survey to 2.96 acres in current resurvey. The gross cropped area had increased from 373.03 acres in last survey to 746.18 acres in current resurvey. The net irrigated area had increased from 67.33 acres in last survey to 375.45 acres in current resurvey. The gross irrigated area had also increased from 134.66 acres in last survey to 746.18 acres in the current resurvey. Thus, the cropping intensity had increased from 196.83% in last survey to 198.69% in the current resurvey. While the irrigation intensity had slightly decreased from 200% in last survey to 198.69% in current resurvey. Thus, the percentage of agricultural land in geographical area had increased from 34.29% in last survey to 65.35% in current resurvey. The main source of irrigation in last survey was only well and current resurvey

was Tube-Well. Thus, the land use pattern had changed significantly in Khatangiya village the related data are given in Table-V-2.1

Table-V-2.1
Land use pattern in the village Khatangiya

(Unit: Acers)

| Particulars | In 1964-65 (during last survey) | In 2018-19 (during current survey) |
|--|------------------------------------|---------------------------------------|
| Geographical Area | 571.34 | 574.52 |
| Agricultural/ Cultivable Land | 195.89 | 375.45 |
| Net Sown Area | 186.51 | 375.45 |
| Uncultivated area | | |
| Barren Land | - | - |
| Forest Area | - | - |
| Pasture and Grazing Land | 4.75 | 2.72 |
| Cultivable Waste | 3.18 | 2.96 |
| Misc. Trees & Crops | - | - |
| Current Fallow | - | - |
| Others | - | - |
| Other lands | | |
| Gross Cropped Area | 373.03 | 746.18 |
| Net Irrigated Area | 67.33 | 375.45 |
| Gross Irrigated Area | 134.66 | 746.18 |
| % area under irrigation | | 100% |
| Cropping Intensity | 196.83 | 198.69 |
| Irrigation Intensity | 200.00 | 198.69 |
| % agricultural land in geographical area | 34.29 | 65.35 |
| % current fallow in geographical area | - | - |
| Main sources of irrigation | Well | Tube-well |

V.2.2.- Distribution of Land holdings in Village Khatangiya

The distribution of land holdings in village Khatangiya analysed in Table-V-2.2 shows that during the last survey the total number of landless households were 21 and during the current resurvey there were 60 landless households. The number of total sample farms during the last

survey 37 and during the current resurvey there were 240 farms. The number marginal farms had tremendously increased from 12 in last survey to 208 in the current resurvey. The total operated area covered by all farms had increased from 195.89 acres during last survey to 375.45 acres during the current resurvey. Therefore, the average size of farms and overall during the last survey was estimated as 6.00 acres. While during the current resurvey it was estimated as 1.56 acres. There were decreasing changes on marginal and medium and above farms. But on small farms there were increasing changes during the current resurvey. This was certainly due to increase in population which resulted sub-division in the holdings year after the year in Khatangiya village. The related data are contained in table-V-2.2.

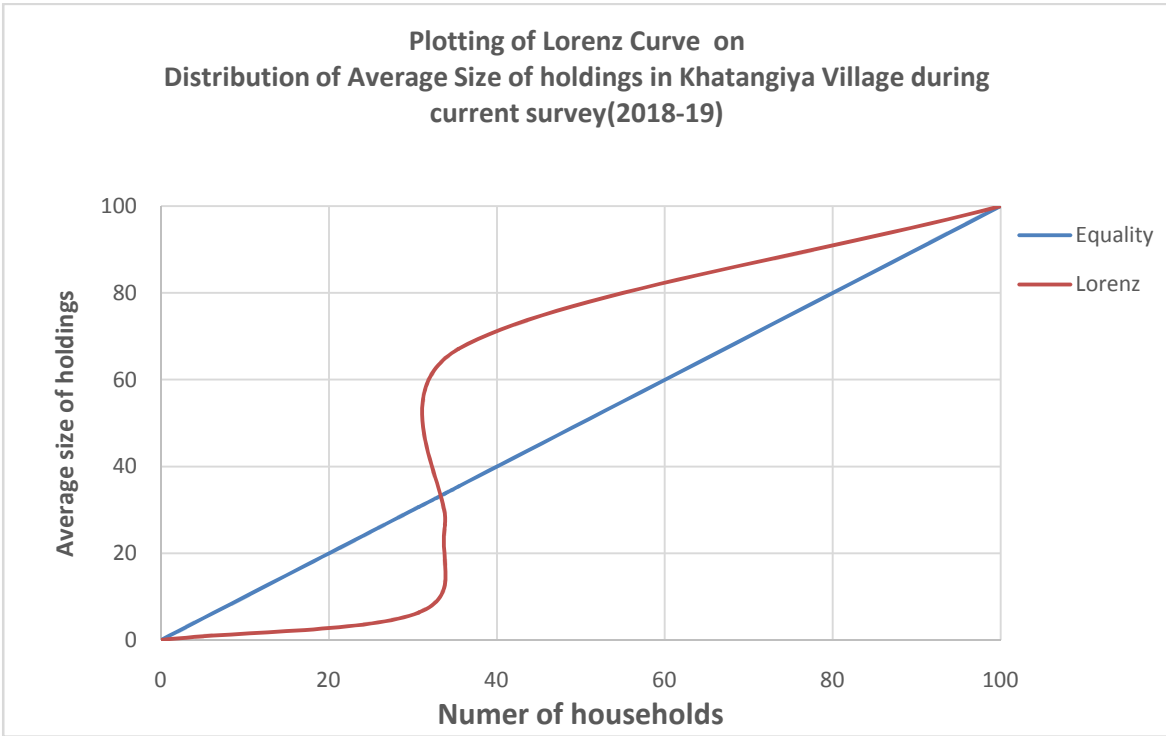
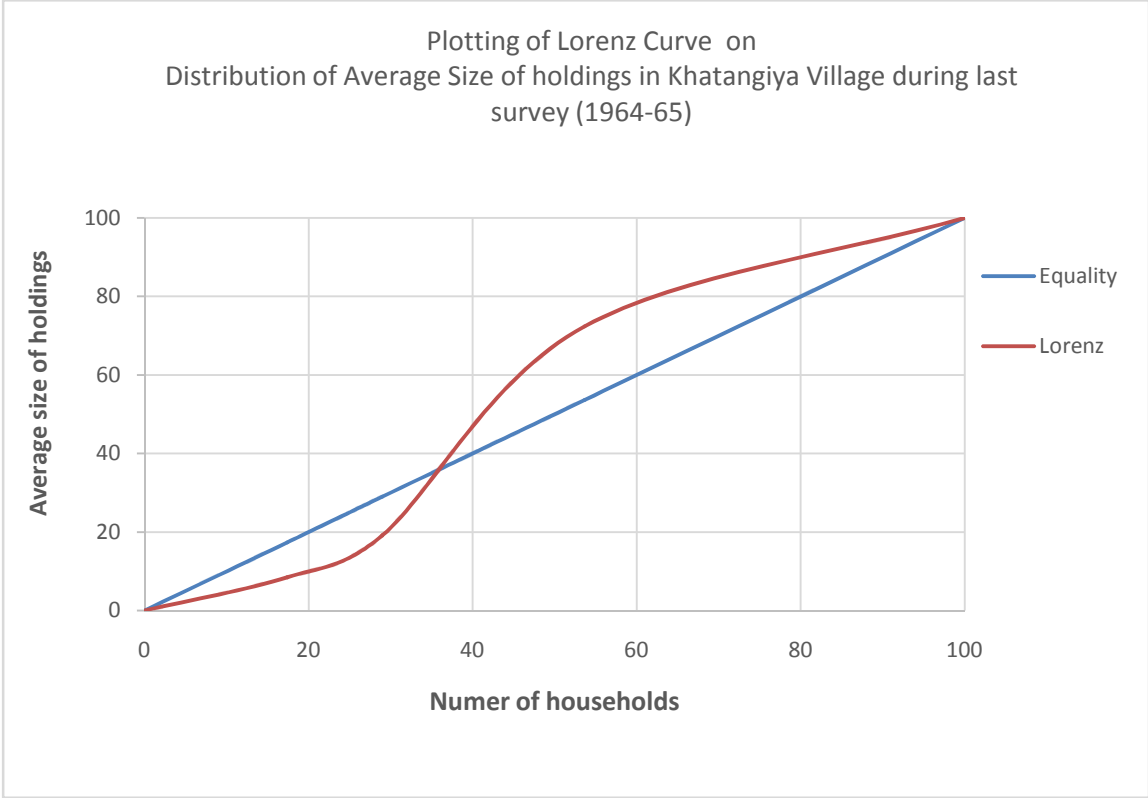
Table-V-2.2
Distribution of land holdings in the village Khatangiya

(Unit: Acres)

| Particulars | In 1964-65 (during last survey) | In 2018-19 (during current survey) |
|---|------------------------------------|---------------------------------------|
| Total number of households Land less | 21 | 60 |
| Marginal farms | 12 | 208 |
| Small farms | 8 | 21 |
| Medium & others | 17 | 11 |
| All Farms | 37 | 240 |
| Total area operated | | |
| Marginal farms | 23.17 | 227.25 |
| Small farms | 16.39 | 72.00 |
| Medium & others | 156.33 | 76.20 |
| All Farms | 195.89 | 375.45 |
| Average size of holdings | | |
| Marginal farms | 1.72 | 1.09 |
| Small farms | 2.17 | 3.43 |
| Medium & others | 10.82 | 6.92 |
| All Farms | 6.00 | 1.56 |
| Gini co-efficient of land holding distribution* | - | - |

* Also plot/draw Lorenz curve for land distribution

Source: Field survey



V.2.3.- Basic characteristics of Farms Households in Khatangiya Village During 2018-19.: -

The basic characteristics of farm households in Khatangiya Village during 2018-2019 analysed in Table-V-2.3 indicates that there were three main categories of farm households in Khatangiya Village. The distribution in such categories as (i) marginal(208), (ii)small(21)and (iii) Medium above(11) shows that majority of farm households were marginal. The average size of family in the village was 5.06 and medium and above farms households had slightly larger family size of 6.27 on an average. The average operated area on an overall was 1.56 acres. Accordingly the land man ratio in the village was 0.30 varying from 0.26 among marginal farms 0.74 among small farms and 1.10 among medium and above farms. The average cropping intensity was estimated as 200% on the farms of almost all the categories. The net irrigation intensity was 100% on all the farms. Regarding the education there were 97 higher secondary passed and 15 were graduates and above out of the 240 farmers of the whole village showing a low level of education in the village. The average number of crops grown annually on all the farms was found to be only two in the village as a whole. The related data are contained in the Table-V-2.3

Table-V-2.3
Basic characteristics of farm households in Khatangiya Village during 2018-19

| Category | Average family size | Average operated area (In Ha) | Land man ratio | Cropping intensity | Net irrigated area (%) | Education of head of family (Years) | | Average nos. of crop grown |
|----------------|---------------------|-------------------------------|----------------|--------------------|------------------------|-------------------------------------|----------|----------------------------|
| | | | | | | Higher secondary | Graduate | |
| Marginal | 4.17 | 1.09 | 0.26 | 200 | 100 | 80 | 10 | Two Crops |
| Small | 4.62 | 3.43 | 0.74 | 200 | 100 | 12 | 2 | Two Crops |
| Medium & above | 6.27 | 6.92 | 1.10 | 200 | 100 | 5 | 3 | Two Crops |
| Total | 5.06 | 1.56 | 0.30 | 200 | 100 | 97 | 15 | Two Crops |

Source: Household survey data, 2019

V.2.4.- Cropping Pattern in Village Khatangiya During 2018-19

The cropping pattern in village Khatangiya during 2018-19 worked out in Table-V-2.4 shows that the total cultivated area in the village was irrigated. Among cereal crops mainly paddy, Bajra and Wheat were grown where in paddy was grown in 367.20 acres in Kharif and Bajara in only 3.00 acres during Kharif. While during Rabi only wheat as cereal crops was grown in 351.58 acres. Pulses were not at all grown. Oilseeds during Rabi was grown only in 6.00 acres. Fruits and vegetables during kharif were grown in 5.25 acres and during Rabi Potato was grown in 13.15 acres in the village as a whole. During summer/zaid, no crop was reported to be grown by any of the farmers. Perennial crops were also not reported to be grown. Rainfed crops were not at all grown. The related data are given in Table-V-2.4.

Table-V-2.4
Cropping Pattern in the village Khatangiya in 2018-19

(Unit:Acres)

| Particulars | Kharif | Rabi | Summer/Zaid/ Boro | Perennial crops | Total |
|------------------------|--------|--------|----------------------|--------------------|--------|
| Irrigated | | | | | |
| 1. Cereal Crops | | | | | |
| Paddy | 367.20 | - | - | - | 367.20 |
| Wheat | - | 351.58 | - | - | 351.58 |
| Bajra | 3.00 | - | - | - | 3.00 |
| 2. Pulses | | | | | |
| 3. Oilseeds | - | 6.00 | - | - | 6.00 |
| 4. Fruits & vegetables | 5.25 | - | - | - | 5.25 |
| Potato | - | 13.15 | - | - | 13.15 |
| | - | - | - | - | - |
| 5. Others | - | - | - | - | - |
| Rainfed | | | | | |
| 1. Cereal Crops | | | | | |
| Paddy | - | - | - | - | - |
| Wheat | - | - | - | - | - |
| 2. Pulses | - | - | - | - | - |
| 3. Oilseeds | - | - | - | - | - |
| 4. Fruits & vegetables | - | - | - | - | - |
| Potato | - | - | - | - | - |
| 5. Others | - | - | - | - | - |

Source: Field Survey

V.2.5.- Changes in Cropping Pattern on the farms of Khatangiya Village During current Resurvey over the Last Survey

The changes in cropping pattern on the farms of Khatangiya village during the current resurvey over the last survey analyzed in Table-V-2.5 shows that in irrigated condition during the last survey the total cropped area was estimated as 1.49 acres per farm household(F.H.H.), wherein maximum i.e. 0.64 acre was under wheat, 0.29 under oilseeds and 0.31 acre was covered under paddy. While during the current resurvey period the total cropped area per farm household was estimated as 6.85 acres wherein the maximum i.e. 1.53 acres was under paddy, 1.46 acres under wheat 1.00 acre under Bajara, 1.00 under the oilseeds, 0.66 acre under fruits and vegetables and 1.20 acre was under potato. Thus, the percentage change on an average was accounted as 359.73% in the current resurvey over last survey. The maximum changes i.e. 393.555% and 380.00% were therein paddy and potato respectively. Under rainfed condition during last survey only maize was taken in 3.55 acre while in the current resurvey period no crop was taken at all. Thus on an aggregate during the last survey the total area covered was estimated as 5.04 acres and during the current resurvey it was estimated as 6.85 acres on an aggregate. Thus, on the whole there was a change by 35.91% in the current resurvey over the last survey. The related data are contained in Table-V-2.5.

Table-V-2.5

Changes in cropping pattern on the Farms in the village Khatangiya

(In acres)

| Particulars | In 1964-65 (during last survey) | In 2018-19 (during current survey) | % Changes |
|------------------------|------------------------------------|--|---------------|
| Irrigated | | | |
| 1. Cereal Crops | | | |
| Paddy | 0.31 | 1.53 | 393.55 |
| Wheat | 0.64 | 1.46 | 128.13 |
| Bajra | - | 1.00 | - |
| 2. Pulses | - | - | - |
| 3. Oilseeds | 0.29 | 1.00 | 244.83 |
| 4. Fruits & vegetables | - | 0.66 | - |
| Potato | 0.25 | 1.20 | 380.00 |
| Irrigated | 1.49 | 6.85 | 359.73 |
| | | | |
| 5. Others | | | |

| | | | |
|------------------------|-------|------|------------|
| Rainfed | | | |
| 1. Cereal Crops | | | |
| | Paddy | | |
| | Wheat | | |
| | Maize | 3.55 | |
| 2. Pulses | | | |
| 3. Oilseeds | | | |
| 4. Fruits & vegetables | | | |
| Potato | | | |
| | | | |
| Un-irrigated | | 3.55 | |
| 5. Others | | | |
| G. Total | | 5.04 | 6.85 35.91 |

Source: Field Survey

Note: F.H.H. = Farm Household

V.2.6.: Trends in Cropping Pattern in Khatangiya Village During 1964-65 to 2018-19:-

The trends in cropping pattern in Khatangiya village during 1964-65 to 2018-19 worked-out in Table-V-2.6 indicates that on an overall during the last survey the share of cereal crops in total cropped area was 71.48% pulses was 21.83%, oilseeds was 1.70% and the vegetables was 4.99%. While during the current resurvey the share of cereal crops was estimated as 96.73% oilseeds was 0.80% and vegetables was 2.47%. The pulses were not grown during the current resurvey period. Thus, the trends in cropping pattern during the recurrent survey over the last survey has been changed, wherein the more and more emphasis has been given to grow cereal crops in lieu of other groups of crops in Khatangiya village. The CAGR in area also indicates that there was complete diversification towards growing cereal crops having 0.01% CAGR. While among other groups of crops the CGAR were in minus and clarifies that the shares of these groups of crops were quite negligible in Khatangiya Village. The related data are given in Table V.2.6.

Table-V-2.6
Trends in cropping pattern in Khatangiya during 1964-65 to 2018-19

| Crop groups | Share in total cropped area (%) | | CAGR in Area (%) |
|---------------------|------------------------------------|------------------------------|------------------|
| | In 1964-65 (during last survey) | In 2018-19 Current Survey | |
| Cereals | 71.48 | 96.73 | 0.01 |
| Pulses | 21.83 | - | -1.00 |
| Oilseeds | 1.70 | 0.80 | -0.01 |
| Cash crops | - | - | - |
| Fruits | - | - | - |
| Nuts | - | - | - |
| Condiments & Spices | - | - | - |
| Vegetables | 4.99 | 2.47 | -0.01 |
| Others | - | - | - |
| Total | 100 | 100 | - 1.01 |

Source: Field Survey

V.2.7.- Nature and Extent of crop Diversification on the Farms During various seasons in Khatangiya Village

The nature and Extent of crop diversification on the farms during various seasons in Khatangiya village analysed in Table-V-2.7 indicates that the Herfindhal Herschman Index(H.H.I.) of crop diversification in kharif season on an overall on all farms was estimated as 0.01, on medium and above farms also as 0.01 and on small and marginal farms it was estimated as 0.00 which clearly indicates that during kharif season there was complete and special diversification of crops on medium and above on all farms in Khatangiya village. While during Rabi season also there was complete and special diversification on small and medium and above of farms. But on an overall farms in rabi season it was slightly different and there was compete and special diversification in Khatangiya village. In Zaid no crops was grown on any of the farms in Khatangiya.

On the other hand on an average on all the farms more than 4 crops (4.66) were grown in an year. The season-wise number of crops shows that on an overall in an year 4 crops were grown on marginal farms and 5 crops were grown on small and medium and above farms. During kharif and rabi seasons two crops in each season were generally grown making a total of 4 crops on marginal farms and 5 crops on small and medium farms, while the share of area under staple food crops in gross cropped area on all the farms was estimated as 96.37%. Similarly on marginal farms it was estimated as 96.24% on small farms and medium above farms it was estimated as 96.71%. Thus the staple food crops i.e. Paddy and Wheat were grown in the more than 96% area on all the farms in the village.

During kharif season the main three crops generally grown were paddy, Bajara and Vegetables, while during rabi season the main three crops grown were Wheat, potato and Oilseeds.

The percentage of farmers changed cropping pattern during last 5 years was 8.75% on an overall. While the percentage of farmers changed crop varieties of major crops was 15% on an overall. The reason for crop diversification were more profit more output and minimum inputs. The main reasons for changing crop varieties were more yield, better disposal and seed purpose. The related data are given in Table-V-2.7.

Table-V-2.7
Nature and extent of crop diversification on the Farms of Khatangiya Village

| Particulars | Marginal Farms | Small Farms | Medium & others | Overall |
|--|-----------------------|--------------------|----------------------------|----------------|
| Herfindhal Herschman Index(H.H.I.) of Crop Diversification | | | | |
| Kharif Season | 0.00 | 0.00 | 0.01 | 0.01 |
| Rabi Season | 0.00 | 0.01 | 0.01 | 0.002 |
| Summer/Zaid/Boro | - | - | - | - |
| Overall* | - | - | - | - |
| Average numbers of crop grown | | | | |
| Kharif Season | 2 | 2 | 3 | 2.33 |
| Rabi Season | 2 | 3 | 2 | 2.33 |
| Summer/Zaid/Boro | - | - | - | - |
| Overall* | 4 | 5 | 5 | 4.66 |

Contd.

| | | | | |
|---|---|--|--|-------------------------|
| Share of staple food crops area in gross cropped area (%) | 96.24 | 96.71 | 96.71 | 96.37 |
| Main three crops cultivated | | | | |
| Kharif Season | Paddy, Vegetables | Paddy, Vegetables | Paddy, Bajra Vegetables | Paddy, Bajra Vegetables |
| Rabi Season | Wheat, Potato | Wheat, Potato, Oilseeds | Paddy, Vegetables | Wheat, Potato, Oilseeds |
| Summer/Zaid/Boro | - | - | - | - |
| Overall* | Paddy, Vegetables, Wheat, Potato | Paddy, Vegetables, Wheat, Potato, Oilseeds | Paddy, Bajra Vegetables, Wheat, Oilseeds | Wheat, Potato, Oilseeds |
| % farmers changed cropping pattern during last 5 years | 18 (8.65) | 2 (9.52) | - | (8.75) |
| % farmers changed crop varieties of major crops | 32 (15.28) | 4 (19.05) | - | (15.00) |
| Main three reasons for crop diversification | More prefix more output minimum inputs | | | |
| Main three reasons for changing crop varieties | More yield better disposal seed purpose | | | |

Note: * Overall includes perennial crops

Source: Field Survey

V.2.8.: Pattern of crops Diversification Across Different Size-groups During 2018-19 in Khatangiya Village

The pattern of crop diversification of various levels across different size-groups during 2018-19 in Khatangiya village worked-out in Table-V-2.8 shows that in the village as a whole there was only one level of crop diversification on all the farms at aggregate level as well as on all the farms of different size-groups. The level of diversification of crops on farms of Khatangiya was of complete and special diversification of $HH1=0.01$ or -0.00 on all the forms as well as on an aggregate level. The information are contained in Table-V-2.8.

Table-V-2.8**Pattern of crop diversification across different size groups in 2018-19 in Khatangiya village**

(Number of farmers & %)

| Categories of Farms | Level of diversification | | | | Total (%) |
|---------------------|------------------------------------|---------------------------------------|---|-----------------------------------|----------------------|
| | Complete specialization (HHI=0.01) | Low diversification (HHI=0.1 to 0.25) | Moderate diversification (HHI=0.26 to 0.50) | High diversification (HHI= >0.50) | |
| Marginal | 208 (100.00) | - | - | - | 208 (100) |
| Small | 21 (100.00) | - | - | - | 21 (100) |
| Medium | 11 (100.00) | - | - | - | 11 (100) |
| Overall | 240 (100.00) | - | - | - | 240 (100) |

Source: Field Survey

V.2.9.: Yield of Major crops in Khatangiya Village During the Last and Current Resurvey Period

The yield of major crops in Khatangiya village during the last and current resurvey period worked-out in Table-V-2.9 shows that among the cereal crops, the yield of paddy during the last survey was estimated as 2.00 qtl. Per acre. While during the current resurvey period it was estimated as 16.97 qtl. per acre showing 748.50% change in the yield of paddy. The yield of Bajra during the last survey was estimated as 1.06 qtl. per acre and during the current resurvey it was estimated as 8.60 qtl. per acre showing 654.72% change over the last survey. While in case of wheat during the last survey it was estimated as 1.21 qtl. per acre and during the current resurvey it was estimated as 15.92 qtl. per acre. Thus, there was a change of 1215.70% over the yield of last survey. Thus, among cereal crops the changes in the yield was tremendously high in the current resurvey over the last survey. The yield of Oilseeds during current resurvey was estimated as 4 qtl per acre. While the yield of potato during the last survey was estimated as 7.80 qtl per acre and during the current resurvey it was estimated as 75.29 qtl per acre. Thus, the change in the yield of potato in current resurvey over the last survey was 861.54% showing a bumper change. The related data are given in Table-V-2.9.

Table-V-2.9
Yield of major crops in the village Khatangiya During the Last Survey and Current
Resurvey

(Unit: Qtl/acres)

| Particulars | In 1964-65 (during last survey) | In 2014 (Five years before) | In 2019 (during current survey) | % Changes |
|------------------------|--|--|--|------------------|
| Irrigated | | | | |
| 1. Cereal Crops | | | | |
| Paddy | 2.00 | | 16.97 | 748.50 |
| Wheat | 1.21 | | 15.92 | 1215.70 |
| Bajra | 1.06 | | 8.60 | 654.72 |
| 2. Pulses | | | | |
| 3. Oilseeds | - | | 4.00 | - |
| 4. Fruits & vegetables | | | | |
| Potato | 7.80 | | 75.29 | 861.54 |
| | | | | |
| 5. Others | - | - | - | - |
| Rainfed | | | | |
| 1. Cereal Crops | | | | |
| Paddy | - | - | - | - |
| Wheat | - | - | - | - |
| 2. Pulses | | | | |
| 3. Oilseeds | - | - | - | - |
| 4. Fruits & vegetables | - | - | - | - |
| Potato | - | - | - | - |
| 5. Others | - | - | - | - |

Source: Field Survey

V.2.10.: Profitability of Major Crops Cultivated in Khatangiya Village During 2018-19

The profitability of major crops cultivated in Khatangiya village during 2018-19 worked-out in Table-V-2.10 shows that during 2018-19 the major crops such as Paddy and Wheat cultivated by all the 240 cultivators of Khatangiya village were reported to be profitable. Also the Potato as major vegetable crop cultivated by only 12 cultivators of Khatangiya village was reported to be

profitable during 2018-19. Thus, 100% of the respondents cultivating major crops had responded that all the major crops cultivated in Khatangiya village were profitable. The related data are contained in Table-V-2.10.

Table-V-2.10
Profitability of major crops cultivated in the village Khatangiya during 2018-19
 (% respondents)

| Particulars | Profitable | No profit no loss | Incurred loss | Total |
|--------------------|-------------------|--------------------------|----------------------|--------------|
| Irrigated | | | | |
| Paddy | 100 | - | - | 100 |
| Wheat | 100 | - | - | 100 |
| Potato | 100 | - | - | 100 |
| | | | | |
| Rainfed | | | | |
| Paddy | - | - | - | - |
| Wheat | - | - | - | - |
| Potato | - | - | - | - |

V.2.11.: Disposal of Major Farm Produces and Price Realization During 2018-19 by Farmers of Khatangiya Village

The disposal of major farm produces and price realization during 2018-19 by farmers of Khatangiya analysed in Table-V-2.11 shows that the major crops produced in Khatangiya were paddy, wheat and potato during 2018-19. The percentages of produces sold were estimated as paddy 52.23%, wheat 50.98% and potato 90.00%. The average prices received by the farmers were Rs. 1510 per qtl for paddy, Rs. 1700 per qtl for wheat and Rs. 635 per qtl for potato. All the major produces were reported to be sold in the nearby mandi in Jasra town. The dairy produce as fluid-milk was also reported to be realized at the average price received as Rs. 30 to 35 per litre in the village itself to local consumers. The related data are given in Table-V-2.11.

Table-V-2.11
Disposal of major farm produces and price realization by farmers of Khatangiya during 2018-19

| Particulars | % produce sold | Average price received (Rs. Per Qtl.) | Units | Sold to whom? |
|-------------|----------------|---------------------------------------|---------|--------------------------------|
| Crops | | | | |
| Paddy | 52.23 | 1510 | Rs./Qtl | Mandi |
| Wheat | 50.98 | 1700 | Rs./Qtl | Mandi |
| Potato | 90.00 | 635 | Rs./Qtl | Mandi |
| Milk | - | 30 to 35 | Rs./lit | In village to consumers |
| Fish | - | - | - | - |
| Poultry | - | - | - | - |
| Egg | - | - | - | - |

Source: Field survey

V.3.: Income Composition in Khatangiya by Livelihood Groups During 2018-2019

V.3.1.: Composition of Annual Income of Households in Khatangiya village by Livelihood Groups

The composition of annual income of households in Khatangiya village by livelihood groups analysed in Table-V-3.1 indicates that in cultivators group the annual household farm income was estimated as Rs. 34,590 and the annual per capita income was estimated as Rs. 6,918. In agricultural labourers group the off-farm income of household was estimated as Rs. 1,14,451 and the per capita per annum income was estimated Rs. 18,521. The farm income from dairying as annual income was Rs. 2,568 and per capita per annum from dairying was Rs. 642. Among Govt. salaried group the annual non-farm income was Rs. 4,58,111 and the per capita per annum income was Rs. 91,622. While in case of private salaried group the annual non-farm income was Rs. 73,537 and the per capita per annum income was Rs. 14,707. In case of pensioner the annual non-farm income was Rs. 1,10,116 and per capita per annum income was Rs. 16,517. Among businessmen group the annual non-farm income was Rs. 1,41,375 and per capita per annum income was Rs. 28,275. While among casual labours the annual non-farm income was Rs.

72,079 and the per capita per annum non-farm income was Rs. 14830.27. From the other livelihood the annual non-farm income was Rs. 65,400 and the per capita per annum income was Rs. 8,466. Thus, the annual farm household income on an overall was Rs. 43919.33 the off-farm household income was Rs. 64595.50 and the non-farm household annual income was Rs. 53436.33. The overall average income per capita per annum was estimated as Rs. 24949.35. Therefore, annual household income from non-farm livelihood, was comparatively much higher. The off-farm household income was considerable. But the farm household income was lowest among all the livelihoods/occupations in Khatangiya village. The related data are given in Table-V-3.1.

Table-V-3.1
Composition of annual income of households in Khatangiya by livelihood groups
(Rupees per capita per annum)

| Livelihood Groups | Annual Household Income | | | Total income per capita per annum |
|-------------------------------|-------------------------|-----------------|------------------|-----------------------------------|
| | Farm Income | Off-farm Income | Non-farm Income | |
| Cultivator | 34590 | - | - | 6918 |
| Agricultural labour | - | 114451 | - | 18521.02 |
| Dairy/Fishing/Poultry keeping | 2568 | - | - | 642 |
| Govt Salaried | - | - | 458111 | 91622.2 |
| Private Salaried | - | - | 73537 | 14707.4 |
| Pentioner | - | - | 110116 | 16517.6 |
| Caste based profession | - | - | - | - |
| Trade & business | - | - | 141375 | 2827.5 |
| Entrepreneur | - | - | - | - |
| Casual labour | - | - | 72079 | 14830.21 |
| Marginal labour | - | - | - | - |
| Household | - | - | - | - |
| Others | 94600 | 14740 | 65400 | 8466.60 |
| Overall | 43919.33 | 64595.50 | 153436.33 | 24949.35 |

Source: Field Survey

V.3.2.: Composition of Annual Income by Castes in Khatangiya Village During 2018-19

Table-V-3.2 indicates that on an overall (all castes) average the total income per capita per annum was accounted as Rs. 5269.89 of which the maximum i.e. Rs. 3044.85 was non-farm

income, Rs. 1579.37 was farm income and only Rs. 645.67 was as off-farm income. Thus, income from non-farm occupation was comparatively higher than farm-occupation as well as off-farm occupations in Khatangiya village. The caste-wise distribution of annual income per capita indicates that the highest per capita annual income i.e. Rs. 6406.94 was accounted among general castes, wherein the maximum i.e. Rs. 4083.68 was non-farm income, Rs. 2157.01 was as farm income and Rs. 166.25 was as off-farm income. Among OBCs, it was next higher i.e. Rs. 5434.41 of which the maximum i.e. Rs. 2718.68 was as non-farm income, Rs. 680.19 as off-farm income and Rs. 2035.54 as farm income. Among Scheduled Castes it was lowest i.e. Rs. 3968.32 wherein the maximum i.e. Rs. 2332.19 was as non-farm income, Rs. 1090.57 was as off-farm income and Rs. 545.56 was as farm income. Thus, among general castes it was highest against lowest scheduled castes.

Table-V-3.2
Composition of annual income by castes in Khatangiya during 2018-19
(Rupees per capita per annum)

| Castes | Farm Income | Off-farm Income | Non-farm Income | Total |
|---------------------|--------------------|------------------------|------------------------|--------------|
| Caste Hindu General | 2157.01 | 166.25 | 4089.68 | 6406.94 |
| Scheduled Caste | 545.56 | 1090.57 | 2332.19 | 3968.32 |
| Scheduled Tribe | - | - | - | - |
| OBC | 2035.54 | 680.19 | 2718.68 | 5434.41 |
| Minorities | - | - | - | - |
| Overall All Castes | 1579.37 | 645.6 | 3044.85 | 5269.89 |

Source: Field Survey

V.3.3.: Average Number of the Respondents of Income Sources Occupations /Livelihood Groups and Castes in Khatangiya Village During 2018-19

Table-V-3.3 indicates that on an overall 300 respondents were there from all the livelihood groups. The maximum i.e. 130 respondents were from the OBCs, 91 were from general castes and 79 were from scheduled castes in Khatangiya village. Thus, respondents from OBCs were the dominating groups of livelihoods in Khatangiya village. The occupation-wise distribution of the respondents shows that the maximum i.e. 240 respondents belonged to cultivators group, 16 belonged to agricultural labours group, 21 belonged to private salaried group, 9 belonged to govt. salaried group and 8 belonged to casual labours group on an overall in Khatangiya village

wherein respondents from OBCs were on higher side as compared to other castes in almost all the livelihood groups in Khatangiya village.

Table-V-3.3
Average number of Respondents of income sources occupations/livelihood groups and castes in Khatangiya village during 2018-19

| Livelihood Groups | (Nos) | | | | | |
|-------------------------------|-----------------------|----|----|-----|----------|-----|
| | Caste Hindu (General) | SC | ST | OBC | Minority | All |
| Cultivator | 76 | 51 | - | 113 | - | 240 |
| Agricultural labour | - | 14 | - | 2 | - | 16 |
| Dairy/Fishing/Poultry keeping | - | 1 | - | 1 | - | 2 |
| Govt Salaried | 3 | 2 | - | 4 | - | 9 |
| Private Salaried | 8 | 7 | - | 6 | - | 21 |
| Pentioner | 1 | - | - | 1 | - | 2 |
| Caste based profession | - | - | - | - | - | - |
| Trade & business | 1 | - | - | - | - | 1 |
| Entrepreneur | - | - | - | - | - | - |
| Casual labour | 2 | 3 | - | 3 | - | 8 |
| Marginal labour | - | 1 | - | - | - | 1 |
| Household | - | - | - | - | - | - |
| Others | - | - | - | - | - | - |
| Overall | 91 | 79 | - | 130 | - | 300 |

Source: Field survey

Chapter-VI

Ecology, Vulnerability and Sustainability

This chapter mainly deals with the extreme events and exposures to shocks (Ecology), degree of hardships faced (Vulnerability) by rural groups, crops and livestock, major coping strategies of household levels for different extreme events relating to farmers, labor class and poor peoples and major adaptation strategies by different stakeholders to combat extreme events during last 5 years between 2014-19 which are discussed in the following paragraphs :-

VI.I.I. :- Frequency of Extreme Events and Exposures to Shocks during Last 5 Years in Khatangiya Village

Table-VI-I.I. indicates that the occurrences of droughts and floods during the last 5 years were reported to be increased where in droughts occurred more oftenly. Farmers as well as labourers were found to be most vulnerable groups among the villagers of Khatangiya. On the other hand paddy and wheat were the most vulnerable crops and potato was the least vulnerable vegetable. Cyclones, erratic rainfall and heat and coldwaves were also reported to occurs oftenly and farmers as well as labourers were told to be the vulnerable groups. Among the crops, paddy and wheat were the most vulnerable crops and vegetables were least vulnerable crops. landslides, epidemics and major accidents were not at all reported during the last 5 years in Khatangiya. Suicides occurred rarely among laborers in Khatangiya. Robbery, violence and loss of job were not reported during the last 5 years in Khatangiya village. Price hikes crashes for paddy and wheat crops occurred more oftenly in Khatangiya. The related informations are contained in Table VI.I.I.

Table-VI-1.1
Frequency of extreme events during last 5 years and exposures to shocks in Khatangiya

| Extreme Events | Change in occurrence (Increased/Decreased/ No change) | Frequency during last 5 years | Most vulnerable groups* | Least vulnerable groups* | Most vulnerable crops or enterprises | Least vulnerable crops or enterprises |
|------------------|---|-------------------------------|-------------------------|--------------------------|--------------------------------------|---------------------------------------|
| Drought | Increased | Often | Farmers & Labourers | - | Paddy & wheat | Potato |
| Flood | Decreased | - | - | - | - | - |
| Cyclone | Yes | Often | Farmers & Labourers | - | Paddy & wheat | Vegetable |
| Erratic Rainfall | Yes | Often | Farmers & Labourers | - | Paddy & wheat | - |
| Heat wave | Yes | Often | Farmers & Labourers | - | Paddy & wheat | Vegetable |
| Cold wave | Yes | Often | Farmers & Labourers | - | Paddy & wheat | Potato |
| Land slides | No | - | - | - | - | - |
| Epidemic | No | - | - | - | - | - |
| Major accident | No | - | - | - | - | - |
| Suicide | Yes | Rare | Labourers | - | - | - |
| Robbery | No | - | - | - | - | - |
| Violence | No | - | - | - | - | - |
| Loss of job | No | - | - | - | - | - |
| Price crush | Increased | Often | Farmers | - | Paddy & wheat | - |
| Any others | - | - | - | - | - | - |

Source: Field Survey

VII.2:- Degree of Hardship Faced (Vulnerability) During Last 5 Years (in 0 – 5scales) in Khatangiya Village:-

The degree of hardship faced (Vulnerability) during last 5 years (in 0 -5 scales) in Khatangiya village worked out in table VII.2 indicates that due to drought the damages to crops as well as hardship to cattle were reported to be high. While, during the last 5 years the hardship to small ruminants and damages to fisheries were found to be moderate. The hardships to poors in the village was told to be extreme. While hardship to children as well as women was reported to be low. But the hardship to old and aged peoples was told to be moderate in the village. Thus, vulnerability of drought was considerably high in Khatangiya Village during 2014-19. Flood was not reported as River Yamuna had shifted at least 2.5 kms away from the village towards north

long time ago. Regarding hardship due to cyclone during the last 5 years in the village it was reported that the damages to crops and hardship to cattle was of high degree, hardship to small ruminants was moderate, damage to fisheries was low. But hardship to poor peoples of village was high. Hardship to children and women was low but to the aged people it was moderate. The hardship due to erratic rainfall towards the damage to crops and cattle were moderate, hardship to ruminants and fisheries was low, to poor was moderate and the hardship to children, women and aged men was found to be low in the village. Due to heat waves during last five years as damages to fisheries and hardship to poor, children, women and aged men were of low degree. While due to cold waves the hardship to crops was of high degree, to cattle it was moderate, but to ruminants it was low, damage to fisheries was nil and hardship to poor, women, children was negligible and to aged people it was low. The damages due to landslides, epidemic and major accidents were not at all reported during the last 5 years in the village. Suicides of moderate degree were reported among poor in the village. Also robbery and violence were not reported during last 5 years in the village. Loss of job and price crash of negligible and low degree among poor children, women and aged old men in Khatangiya village. Therefore, vulnerability due to climate extremes faced by Livestocks, poor men, women and children was high, moderate and low in the village. The related data are given in Table-VI-1.2.

Table-VI-1.2
Degree of hardship faced (vulnerability) during last 5 years (in 0-5 scale)

| Climate Extremes | Damages to crops | Hardship to cattle | Hardship to small ruminants | Damages to fisheries | Hardship to poor | Hardship to children | Hardship to aged people | Hardship to women |
|------------------|------------------|--------------------|-----------------------------|----------------------|------------------|----------------------|-------------------------|-------------------|
| Drought | 4 | 4 | 3 | 3 | 5 | 2 | 3 | 2 |
| Flood | - | - | - | - | - | - | - | - |
| Cyclone | 4 | 4 | 3 | 2 | 4 | 2 | 3 | 2 |
| Erratic Rainfall | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 2 |
| Heat wave | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 |
| Cold wave | 4 | 3 | 2 | 0 | 1 | 1 | 2 | 1 |
| Land slides | - | - | - | - | - | - | - | - |
| Epidemic | - | - | - | - | - | - | - | - |
| Major accident | - | - | - | - | - | - | - | - |
| Suicide | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Robbery | - | - | - | - | - | - | - | - |
| Violence | - | - | - | - | - | - | - | - |
| Loss of job | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Price crush | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 |
| Any others | - | - | - | - | - | - | - | - |

Note: Rank (0=Nil; 1=Negligible; 2= Low; 3=Moderate; 4=High; 5=Extreme); Consider only relevant shocks if there was any during last 5 years

VI.1.3.: Major coping Strategies at Household Levels for Different Extreme Events

Major coping strategies at household level for different extreme events during last 5 years in Khatangiya village worked-out in Table-VI-1.3 shows that to combat with drought the crop raising farmers had used their savings as coping strategy, dairy farmers as well as fish farmers had sold their assets. Labourers had migrated outside for jobs. The poors of the village Khatangiya had faced to adopt borrowing as coping strategy. Thus, in the whole village the poorest peoples were the hardest hit from drought during the last 5 years. Flood was not at all reported in the village during last 5 years. Like-wise to combat with cyclone crops growing farmers and dairy farmers had used their savings, fish farmers had sold their assets, labourers had migrated for outside jobs and poorest peoples had been compelled for borrowings.

On the other hand for combating with erratic rainfall as well as with heat and cold waves the crops growing farmers had mortgaged their assets, dairy and fish farmers had sold their assets and used their savings, labourers had migrated-out side for jobs and poors had either borrowed or migrated from the village in want of jobs. Land slides, epidemic and major accidents were not at all reported during the last 5 years in Khatangiya village. Owing to suicide the poorest people were compelled for borrowing. Robbery as well as violence were not reported in the village during last 5 years. Due to loss of job in the village labourers and poorest peoples had migrated outside for jobs. Due to price-crash in the village crops growing farmers had mortgaged their assets, dairy and fish farmers as well as labourers had sold their assets and poorest peoples had migrated from the village for outside jobs. The related informations are contained in Table-VI-1.3.

Table-VI-1.3
Major coping strategies at household level for different extreme events

| Extreme Events | Crop farming Community | Dairy farmers | Fish farmers | Labour class | Poorest peoples | Others 1 (.....) | Others2 (.....) | Others3 (.....) |
|------------------|------------------------|---------------|--------------|--------------|-----------------|------------------|-----------------|-----------------|
| Drought | 3 | 2 | 2 | 4 | 5 | - | - | - |
| Flood | - | - | - | - | - | - | - | - |
| Cyclone | 3 | 3 | 2 | 4 | 5 | - | - | - |
| Erratic Rainfall | 1 | 2 | 2 | 4 | 5 | - | - | - |
| Heat wave | 1 | 2 | 3 | 4 | 4 | - | - | - |
| Cold wave | 1 | 2 | 2 | 4 | 4 | - | - | - |
| Land slides | - | - | - | - | - | - | - | - |
| Epidemic | - | - | - | - | - | - | - | - |
| Major accident | - | - | - | - | - | - | - | - |
| Suicide | 0 | 0 | 0 | 0 | 5 | - | - | - |
| Robbery | - | - | - | - | - | - | - | - |
| Violence | - | - | - | - | - | - | - | - |
| Loss of job | - | - | - | 4 | 4 | - | - | - |
| Price crush | 1 | 2 | 2 | 2 | 4 | - | - | - |
| Any others | - | - | - | - | - | - | - | - |

Note: 1=Mortgaged assets; 2=Sold assets; 3=Used savings; 4=Migration; 5=Borrowing; 6=Reduced consumption; 7=Rely on help/relief; 8=Postpone family festivals; 9=Increase working hours; 10=Change crop/livelihood; 11=Change lifestyle; 12=Passive sufferings; 13=Suicide; 14= Any other (specify)

(Include only those extreme events which occurred during last 5 years i.e., between 2014-2019)

VI.1.4.: Major Adaptation Strategies by Different Stakeholders to Combat Extreme Events.

The major adaptation strategies by different stakeholders to combat extreme events worked-out in the Table-VI-1.4 shows that to combat with drought in this village during last 5 years, livelihood diversification was adapted at individual level. At the government level as well as by the NGOs also various relief programmes were implemented in this village for combating with the drought during last 5 years. To combat with flood and cyclone not a single strategy was adapted by any of the agency. For erratic rainfall as well as heat and cold waves, crop diversification and livelihood diversification were adopted at individual level in the village. Also at the government level and by the NGOs various relief programmes were implemented during the last 5 years. Land slides, epidemic, major accidents, robbery and violence were not at reported in the village during the last 5 years. To combat with suicide, government relief was

found to be provided in the village. For loss of jobs livelihood diversification was adopted at individual, government and at the NGO level too in the village. To combat with price-crush in the village, the relief programmes were adopted at individual, government and NGO level during the last 5 years. The related informations are contained in Table-VI-1.4.

Table-VI-1.4
Major adaptation strategies by different stakeholders to combat extreme events

| Extreme events | Individual level | Government level | By NGO | Community level |
|------------------|------------------|------------------|--------|-----------------|
| Drought | 1 | 7 | 7 | - |
| Flood | - | - | - | - |
| Cyclone | - | - | - | - |
| Erratic Rainfall | 2 | 7 | 7 | - |
| Heat wave | - | 7 | 7 | - |
| Cold wave | 1 | 7 | - | - |
| Land slides | - | - | - | - |
| Epidemic | - | - | - | - |
| Major accident | - | - | - | - |
| Suicide | - | 7 | - | - |
| Robbery | - | - | - | - |
| Violence | - | - | - | - |
| Loss of job | 1 | 1 | 1 | - |
| Price crush | 7 | 7 | 7 | - |
| Any others | - | - | - | - |

Note: 1= Livelihood diversification; 2=Crop diversification; 3=Crop insurance; 4= Health insurance; 5=General insurance;6=Pond making; 7=Relief programme; 8=Income support schemes;; 9=MGNAREGA; 10=Livelihood creation; 11=Afforestation; 12=Immunization; 13= Infrastructure (road, irrigation, storage) development; 14=Easy lending; 15=Loan waiving; 16=Community preparedness; 17=specific (mention)

(Include only those extreme events which occurred during last 5 years i.e., between 2014-2019)

Chapter-VII

Coverage under Government Schemes

III.1.: Coverage under Different Government Sponsored Schemes

Table-VII-1 indicates that under the BPL card scheme, total 188 households were found entitled in the village during 2014-2019 and 178 had availed the facility. Thus, 97.26% coverage was there under this scheme and 100% of beneficiaries were satisfied with the scheme under KCC Card Scheme 240 were entitled but only 69 had availed the facility. Therefore, only 28.75% coverage was reported under this scheme and 100% were satisfied with the scheme. Under public health insurance card scheme as well as soil health card scheme 240 households were entitled but the coverage was nil under these schemes. Under MGNAREGA job Card Scheme 160 households were entitled but only 62 had availed this scheme. Thus, the coverage under this scheme was 38.75% and 77.41% of the beneficiaries were satisfied with the schemes. Under I.C.D.S./Mid day Meal scheme total 199 households had availed this facility. Thus, 42.21% were covered under this scheme and 100% were satisfied. Under Government Scholarship scheme only 84 households were entitled but only 4 had availed. Therefore, only 4.76% had been covered under this scheme and 100% were satisfied. Under Government Housing Scheme, 300 households were entitled but only 31 households had availed this facility. Thus, only 10.33% coverage was there and 100% of beneficiaries were satisfied. Under irrigation, PMKSY/other scheme 240 households were entitled but only 38 had availed. Thus, 15.88% were covered and they all were satisfied. Under crop-insurance, seed minikit, farm machinery and implements, SG Farm Income and life insurance, 240 households were entitled but none had availed. Thus, coverage under these schemes was nil. Under CG Farm Income support scheme 240 households were entitled but only 19 had availed. Therefore, only 7.91% were covered and they were satisfied. Under old pension scheme total 21 households were entitled but only 3 had availed. Thus, the coverage was only 14.28% and 100% were satisfied with the scheme. Under farm pension scheme (PMKMY) 240 households were entitled but none had availed. Under Widow pension scheme 11 households were entitled but only 1 had availed. Thus, the coverage was 9.09% and only 75% were satisfied. Under LPG Scheme (PM UJJALA) 300 households were entitled and only 2 had availed. Thus, the coverage was 17.33% and all were satisfied. Under

farm Loan Waiver Scheme 240 households, PMKVY / organic farming and MSP/PM-AASHA Scheme 240 households were entitled but none had availed. Therefore, under these scheme the coverage was nil. Under the Swachha Bharat Mission Scheme total 83 households of this village were entitled but only 12 had availed. Thus, the coverage under this scheme was 14.63% and 100% of the beneficiaries were satisfied. The related data are given in Table-VII-1.

Table-VII-1
Coverage under different government sponsored schemes

| <i>Name of the scheme</i> | <i>Number of entitled households</i> | <i>No of households/ beneficiaries availed the facility</i> | <i>% coverage</i> | <i>% of beneficiaries satisfied with the scheme</i> |
|---------------------------------------|--------------------------------------|---|-------------------|---|
| 1. BPL Card | 188 | 178 | 97.26 | 100.00 |
| 2. KCC Card | 240 | 69 | 28.75 | 100.00 |
| 3. Public Health Insurance Card | 240 | 0 | - | - |
| 4. Soil Health Card | 240 | 0 | - | - |
| 5. MGNAREGA Job Card | 160 | 62 | 38.75 | 77.41 |
| 6. ICDS/Mid Day Meal | 199 | 84 | 42.21 | 100.00 |
| 7. Govt. Scholarship Schemes | 84 | 4 | 4.76 | 100.00 |
| 8. Govt. Housing Scheme (IAY/PMAY) | 300 | 31 | 10.33 | 100.00 |
| 9. Crop Insurance: PMFBY/Others | 240 | 0 | - | - |
| 10. Irrigation: PMKSY/Others | 240 | 38 | 15.88 | 100.00 |
| 11. Seed Minikit scheme | 240 | 0 | - | - |
| 12. Farm machinery or implements | 240 | 0 | - | - |
| 13. Life Insurance (Govt sponsored) | 300 | 0 | - | - |
| 14. CG Farm Income Support (PM-KISAN) | 240 | 19 | 7.91 | 100.00 |
| 15. SG Farm Income Support Schemes | 240 | 0 | - | - |
| 16. Old Age Pension Schemes | 21 | 3 | 14.28 | 100.00 |
| 17. Farm Pension Scheme (PM-KMY) | 240 | 0 | - | - |
| 18. Widow Pension Scheme | 11 | 1 | 9.09 | 75.00 |
| 19. Farm Loan Waiver Scheme | 240 | 0 | - | - |
| 20. LPG scheme (PM UJJALA) | 300 | 2 | 17.33 | 100.00 |
| 21. PMKVY/Organic Farming | 240 | 0 | - | - |
| 22. MSP/PM-AASHA Scheme | 240 | 0 | - | - |
| Any Other (Specify) | | | | |
| 1. Swach Bharat Mission | 83 | 12 | 14.63 | 100.00 |

VII.2.: Crop-Wise Fertilizer Use Vis-à-vis Recommended Doses As Per Soil Health Cards

The crop-wise fertilizer use vis-à-vis recommended doses as per Soil Health Cards (SHCs) worked-out in Table-VII-2 shows that during Kharif season Paddy was the main crop for which the recommended doses were Nitrogen – 50Kgs, Phosphorous – 25 Kgs and Potash – 25 Kgs making a total of 100 kgs per ha. While, the actual doses applied were found to be as Nitrogen 35 kgs, Phosphorous 15 kgs and Potash 18 kgs making a total of 68 kgs per ha during the span of 2014-2019 in Khatangiya village. While during Rabi season in case of Wheat the recommended doses were Nitrogen 120 kgs, Phosphorous 60 kgs and Potash 40-50 kgs per ha making a total of 225 kgs per ha. While the actual doses applied were Nitrogen 85 kgs, Phosphorous 42 kgs and Potash 28 kgs making a total of 155 kgs per ha during the span of 2014-2019. In case of Potato the recommended doses were Nitrogen 60 kgs, Phosphorous 100 kgs and Potash 120 kgs making a total of 280 kgs per ha. While the actual doses applied were Nitrogen 40 kgs, Phosphorous 80 kgs and Potash 92 kgs making a total of 212 kgs per ha. Thus, the use of fertilizer was comparatively higher in case of Potato than in cases of Wheat and Paddy in Khatangiya village. The related data are given in Table-VII-2.

Table-VII-2
Crop wise fertilizer use vis-a-vis recommended doses as per Soil Health Cards

| Major crops | Recommended Doses | | | | Actual Application | | | |
|--------------|-------------------|-------------|---------|-------|--------------------|-------------|--------|-------|
| | Nitrogen | Phosphorous | Potash | Total | Nitrogen | Phosphorous | Potash | Total |
| Kharif Paddy | 50 | 25 | 25 | 100 | 35 | 15 | 18 | 68 |
| Summer Paddy | - | - | - | - | - | - | - | - |
| Wheat | 120 | 60 | 40 - 50 | 225 | 85 | 42 | 28 | 155 |
| Potato | 60 | 100 | 120 | 280 | 40 | 80 | 92 | 212 |

VII.3: Crop-wise List of Major Varieties of crops Cultivated in Khatangiya Village

The crop-wise list of varieties of major crops cultivated during 2014-2019 in Khatangiya village listed in Table-VII-3 shows that during 2014 (past) the variety of Kharif Paddy cultivated was Sarju-52 and that of Wheat was RR-21. While during 2019 (present) the variety of Kharif Paddy

was found to be Mansoori (Moti) and that of wheat during Rabi season was told to be UP-110 in Khatangiya village. Thus, the varieties discontinued during 2014-19 were Sarju-52 of Paddy and RR-21 of wheat in Khatangiya village. The list of such varieties are contained in Table-VII-3.

Table-VII-3
Crop-wise list of major varieties cultivated in Khatangiya

| Major crops | Past (in 2014) | Present (In 2019) | Varieties introduced during 2014-19 | Varieties discontinued during 2014-19 |
|--------------|----------------|-------------------|-------------------------------------|---------------------------------------|
| Kharif Paddy | Sarju – 52 | Moti Mansoori | Moti Mansoori | Sarju – 52 |
| Summer Paddy | - | - | - | - |
| Wheat | RR – 21 | UP 110 | UP 110 | RR – 21 |
| Potato | -- | -- | -- | -- |

VII.4.: Composition of Livestocks in Khatangiya Village During 2014-2019

The composition of livestock in Khatangiya village during the last 5 years (2014-2019) worked out in Table-VII-4 indicates that in Khatangiya village cattle (cow, buffaloes and goats) were the major livestock reared during 2014-2019. Among the cattle total 160 (80%) were crossbred (Jersi) and 40 (20%) were indigenous cattle. The predominant breeds of indigenous cattle was sahiwal and that of crossbred cattle was Jersey. Thus, the change in composition of cattle was estimated as 60% from indigenous to crossbred cattle during 2014-2019. While among buffaloes the total 104 (100%) were of improved breeds. The predominant breed of buffalo was Murra. The change in Murra buffalo from other breeds as 80% in Khatangiya village during 2014-2019. Among the goats the total 27 (100%) were of improved breeds. The predominant breed was Yamunapari. The change in the composition was 70% from others to yamunapari breed during 2014-2019 in Khatangiya village. The related information is contained in Table-VII-4.

Table-VII-4
Livestock composition of livestock in the village Khatangiya
 (%)

| Major crops | Crossbreed | Improved | Indigenous/Desi | Predominant breeds | Type of changes in composition during 2014-2019 |
|--------------------|-------------------|-----------------|------------------------|---------------------------|--|
| Cattle | 160 (80.00) | - | 40 (20.00) | Sahinwal & Jersy | 60% Desi to Crossbreed |
| Buffalo | - | 104 (100.00) | - | Murra | 85% Murra improved |
| Goat | - | 27 (100.00) | - | Yamunapari | 70% Yamunapari improved |
| Sheep | - | - | - | - | - |
| Others | - | - | - | - | - |

Chapter-VIII

Summary of Findings and policy Recommendations

VIII.1.: Summary of Findings and Conclusion

- The population of Khatangiya village had increased tremendously during the span of 1964-65 to 2018-19.
- The number of main workers marginal workers and agriculture labors has also increased during the span of 1964-65 to 2018-19 in Khatangiya village.
- The literacy percentage has increased from 38.62% in the last survey to 68.98% in the current resurvey showing 78.61% change in the Khatangiya village.
- There was 388.91% change in the population of Khatangiya village during 2018-2019 over 1964-65.
- The number of males in comparison of females was increased considerably during the span of 1964-65 to 2018-19 in Khatangiya village showing reverse change in the sex ratio.
- During last survey child-marriage was very common while, during current resurvey marriages were carried-out among grown-up persons.
- The highest number of births as well as deaths were reported in the BPL category of scheduled castes who were the most backward in village Khatangiya.
- The family size has been restricted to the limited numbers during the current resurvey period in Khatangiyaa.
- The educational status among both males and females has improved considerably during the current resurvey period in Khatangiyta village.
- On an overall reading competency among boys was comparatively of higher level than among girls.
- In case of the level of arithmetic competency among children of Khatangiya village it was found that in one standard boys were superior and in other standard girls were better.

- The level of reading competency among the children of private school was much better as compared to that in Govt. School on an overall in Khatangiya village during 2018-19.
- In private school the level of arithmetic competency among the male children was comparatively superior in all the categories than that among female children.
- Majority were not facing acute poverty as more than 50% responded not to be worried ever for food in Khatangiya village.
- Both males and females children in majority were severely underweight in the Khatangiya village.
- Among the OBCs and general castes, majority were cultivators where in OBCs were dominating households in Khatangiya village.
- Accordingly the majority, i.e. 43.22% of the adult population were OBCs, 29.50% were SCs and 27.28% were general castes in Khatangiya village.
- Among the adults who had opted dairying as secondary occupation the majority were OBCs in Khatangiya village.
- Female adults were negligible, i.e. only 11.51% of the total adults in all the occupational groups in Khatangiya village.
- The higher number of APLs among SCs confirms that they were better and economically sound in comparison of the APLs among other castes.
- Migration for out side jobs was found nominal and it was found to be higher there by among APLs of general and OBCs castes only in Khatangiya village.
- The cropping intensity has increased from 196.83% in the last survey to 198.69% in the current resurvey in Khatangiya village.
- The land use pattern has changed significantly in the village because in the last survey the main source of irrigation was well and in the current resurvey it was Tube-Well.
- The average size of farms during the last survey was estimated as 6 acres. While during the current resurvey it was estimated as 1.56 acres in Khatangiya village.
- The average number of crops grown annually on all the farms was found to be only two in the village as a whole.
- During Zaid season no crop was reported to be grown. Also no perennial crops were grown. Rainfed crops were rarely grown in Khatangiya village.

- Regarding change in cropping pattern, on the whole there was a change by 35.91% in the current resurvey period over the last survey period.
- The trends in cropping pattern during the current resurvey has been changed, where in more emphasis has been given to grow cereals crops in Khatangiya village.
- The staple foodgrain crops, i.e. paddy as well as wheat were grown in the more than 96% area on almost all the farms in Khatangiya village.
- The reasons for crop diversification were more profit more output and minimum inputs. The reasons for change in varieties were more yield better, disposal and seed purposes.
- The level of diversification of crops on the farms of Khatangiya village was complete and special diversification showing HHI=0.01 or -0.00 on all the farms and on the aggregate level too.
- Among the cereal crops the changes in the yields was tremendously high during the current – resurvey period over the last- survey period.
- The changes in the yield of the potato during the current resurvey over the last survey was 861.54% showing a bumper change in Khatangiya village.
- As regards the profitability from major crops, 100% of the respondent cultivating major crops had responded that all the major crops were profitable.
- All the major produces were reported to be sold in the nearby mandi in Jasara town. Dairy produce as fluid milk was realized at average price as Rs. 30 to 35 per litre in the village to local consumers.
- The annual household income from non-farm livelihood was comparatively much higher. The off-farms household income was considerable. But the farm household income was lowest among all the livelihoods / occupations in Khatangiya village.
- Regarding annual income by castes it was found that among general castes it was estimated as highest against the lowest annual income among the scheduled castes among OBCs it was next higher annual income.
- The respondents from OBCs were the dominating group of livelihoods in Khatangiya village. Among cultivators the respondents from OBCs were on Higher Side in comparison to their castes in all the livelihood groups.
- Farmers as well as labours were found to be most vulnerable groups among the villagers of village Khatangiya.

- Paddy and wheat being staple food crops were the most vulnerable food grain crops and potato was the least vulnerable vegetable crops in Khatangiya village.
- Suicides were reported to be occurred rarely among the poors and labourers in Khatangiya village.
- Price crushes for staple food-grains such as paddy an wheat crops occurred more oftenly in Khatangiya village.
- Hardships due to droughts and cyclones to poor peoples of Khatangiya village were high and extremes.
- The hardships due to cold waves to crops was of high degree, to cattle it was moderate but ruminants it was low and to fisheries it was nil.
- Vulnerability due to climate extremes faced by livestocks, poor men and women and the children was high moderate and low in Khatangiya village.
- The poorest peoples were the hardest hit from drought during the last five years in Khatangiya village.
- To combat with cyclones thee farmers had used their savings and sold their assets, laboures had migrated for jobs and the poorest people for borrowings.
- To combat with erratic rain-falls heat and cold waves, crop diversification as well as livelihood diversification were adopted at individual level in Khatangiya village.
- At the Govt. level and at N.G.O. levels various relief programs were implemented during the last 5 years in Khatangiya village.
- As regards the coverage under the government schemes, 97.26% coverage was there under BPL card scheme and 100% of beneficiaries were satisfied.
- Under K.C.C. card scheme only 28.75% coverage was reported and 100% of the beneficiaries were satisfied with the scheme.
- Under MANAREGA job card scheme the coverage was 38.75% and only 77.41% of the beneficiaries were satisfied with the scheme.
- Under I.C.D.S./ Mid-day meal scheme 42.21% coverage was there and 100% of the beneficiaries were satisfied under this scheme.
- Under PMKSY/ other schemes 15.88% coverage was there and 100% of the beneficiaries were satisfied with the scheme.

- Under LPG scheme (PM-UJJWALA) 17.33% were covered during 2018-19 and 100% beneficiaries were satisfied.
- Under Swachh Bharat Mission scheme there was 14.63% coverage and 100% beneficiaries were satisfied.
- The use of fertilizers was comparatively higher in case of potato than in cases of wheat and paddy in Khatangiya village.
- About major varieties cultivated were Mansoori (Moti) for Paddy and U.P.-110 for wheat in Khatangiya village.
- The varieties discontinued during 2014-19 were sarju-52 of paddy and RR-21 of wheat in Khatangiya village.
- The changes in composition of cattles was 60% from indigenous to crossbreed. Among buffaloes it was 80% and among goats it was 100% from others to yamunapuri breed in Khatangiya village.

VIII-2.: Policy Recommendations

Based on the main findings of the present study the following policy recommendations are predicted :-

1. To check the tremendous increase in the population of Khatangiya village some strict and effective family planning measures must be implemented by the Govt. as well as N.G.Os and individuals.
2. Although literacy has improved in the village but higher educational level is essential for the required changes in the village.
3. Reverse changes in the sex-ratio of this village must be removed by self-control.
4. The higher birth and death rates particularly among B.P.Ls (S.Cs) must be checked in the village through self-control and other suitable measures.
5. Educational tactices in Govt. schools must be improved to compete private schools.
6. Because majority of male and female children were severely underweight therefore, nutritional levels must be improved in the village.

7. Female adults must be encouraged to join SHGs and adopt some jobs. The Govt. must implement suitable processing units for agri-products etc. on large scales
8. In summers (Zaid) season also some suitable varieties of vegetables or rainfed crops must be imposed/ grown to increase the cropping intensity by the cultivating households.
9. Since the annual income of farm households was found to be lowest in the village. Hence, growing spices, vegetables or commercial crops in all the seasons must be lured to the farmers to increase their income.
10. Suicides among the poor and labourers were reported in the village. Hence, they must be taken care of such unhappenings.
11. To combat with the hardships droughts and cyclones the government must provide suitable assistance at their doors.
12. To combat with erratic rainfalls the farmers must adopt suitable crop diversification and suitable livelihoods must be adopted by the labourers and the poor.
13. Agricultural extension services to the needy farmers must be provided by Govt. or any suitable agencies in the village.
14. Infrastructural facilities were lacking acutely in the village. So it must be taken care to provide as their first need by the Govt.
15. Livestock rearing must also be lured to be adopted by poor farmers of this village to increase/ double their household income.

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Appendix- I

Comments on the Draft Report from AERC Viswa Bharti University Shantiniketan

Agro-Economic Research Centre
(For the States of West Bengal, Sikkim and Andaman & Nicobar Islands)
Visva-Bharati



Comments on the Draft Report received from AERC, Allahabad

- | | |
|--|--|
| 1. Title of report | Village Survey Study in Uttar Pradesh (Khatangiya village) |
| 2. Date of receipt of the draft report | 20 August 2020 (Through e-mail) |
| 3. Date of dispatch of the comments | 04 September 2020 (Through e-mail) |

4. Comments on the objectives:

The overall objectives of the study are appropriate and kept unchanged as supplied by the Coordinating Centre (AERC, Visva-Bharati). Since, it was neither changed nor any specific objectives included, the report is reviewed based on stated objectives.

5. Comments on the methodology:

Methodology followed in the study is, by and large, in tune with the stated objectives. However, the following issues need clarification/rectification:

- a. Suggested sample size was 400 (not 300)
- b. Sampling procedure actually followed in the study is Stratified Random Sample with proportional allocation towards the respective categories and not PPS as mentioned.
- c. The study was allotted in 2019-20. So the survey was conducted either during 2019-20 or later. However, everywhere the reference year is mentioned as 2018-19. Please clarify and change wherever required.
- d. The concept of crop diversification indices (HHI and SI) is misunderstood. Simpson index is a measure of diversification where as Herfindahl index is a measure of concentration. Further use of such indices at household level is having different meaning than at village level. Individual farmers may be specialised farmer in one particular crop, but that does not restrict a village to be diversified. This is why the results are contradictory.
- e. Further, the calculation in HHI, SI, and CAGR requires checking. Though the methodology described is fine, but the calculations are erroneous.
- f. Methodology includes most of the things supplied by the coordinator, but many of those are not used in this study.
 - i. Issues like bio-diversity, water pollution, adaptation strategies, pesticide use, etc are mentioned in methodology but not used.
 - ii. Similarly the Cost Concepts and Income Concepts described in the methodology section either not used or used some different concepts.

[It was decided in the methodology workshop and communicated through the proceedings to select a moderately sized village with 300-400 households so that census method can be adopted. If due to unavoidable circumstances the selected village is too large, then proportionate sampling required to be attempted to restrict the total sample households at 400].

5. Comments on analysis, organization, presentation etc:

Detailed analysis is undertaken and organized as required to satisfy the objectives of the study. However, following corrections are needed:

A. Generic Issues/Comments:

- a. There are quite a few typographical errors and discrepancy in data/write-up (marked on the soft copy of the report itself) that needs correction.
- b. As per the stated objectives, the main focus of discussion should have been on the pace, process and pattern of rural change; as well as on key drivers of such changes. However, discussion lacks focus on the dynamics of the change that have taken place in the village and abstains from tracing the causes of such changes.
- c. In village study, the concept of percent change over time (between two survey periods) has different meaning when there is no complete enumeration or equal PPS sampling. In 1964-65, 50% households (58 out of 116) were selected in contrast to 64.5 % (300 out of 465) in 2019-20. Thus, such a direct comparison in the concerned tables should be avoided. The conclusions/policy recommendations based on such changes over time should be done keeping in view the differential base/scale in two different time period.
- d. The concept and methodology of educational competency part (ASER toolkit) is misunderstood. If someone cannot read a simple sentence (Level 3) how can he/she read a full paragraph (Level 4)? How can Standard I students have better educational competency than Standard II, III, IV, or V? Further, the sum of Level 0 to 4 cannot be more than 100%. It seems the whole section has to be restructured.
- e. Calculations of CAGR and crop diversification indices are faulty. How the values of both SI and HHI can be zero? SI=0 means complete specialization i.e., only one crop; whereas HHI=0 means infinite number of crops. However, on an average, there are 4-5 crops are reported in the Table V.2.7. Further the level of measurement is also important (crop or livestock diversification at household level is altogether different than at village/overall/aggregate levels).
- f. The policy recommendation should be based on the findings of the study.
- g. Executive summary is not included

B. Specific Issues/Comments:

- a. In page 61: All household ate poor quality food that they did not like? Pl. check
- b. In page 65, 66, 67: Calculations should be on Distribution of households by occupations/livelihoods not by castes within the occupations/livelihoods. Re calculate the % distributions.
- c. In page 69: Increased to 196.83 to 158.69%? Pl check
- d. Page 70: During last 55 years, irrigation intensity declined and cropping intensity remained stagnant in that village? Pl. check the figures for both the period.
- e. Page 71: Lorenz curve not plotted but footnotes are there. Similar mistakes in case of instructions in page 89 & 90. Pl. check
- f. Page 75: If the area under pulses decreased from 21.83 to 0, how the CAGR can be -1%? So is the case with all other growth rates. Pl. check.
- g. Page 77 & 78: Values of HHI & SI are self-contradictory. Pl. check.

6. References:

The references cited are fine but specific literature review on Village Study is missing. There are a lot of seminal and pioneering work on village studies done both within AERC system (Palanpur village, Slater villages, Sahjahpur village, Bijnor village, Kashipur village, Bisipara village, etc) and outside (ICRISAT, JNU, and several other institutions in India as well as in abroad). Studies done by Amartya Sen, Jean Dreze, M N Srinivas, V S Ranade, S C Dube, D N Majumder, Sunil Sengupta, Himanshu et al, Vandana Madan are few to mention.

7. General remarks:

The report rightly mentioned (in Page 32 and in some other places) regarding arbitrary coordination system followed by AERCs and AERUs and delay by 5 months to start the study.

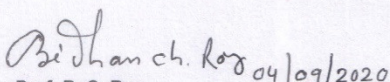
There was two kind of coordination for this particular study. First, in addition to AERC, Visva-Bharati three AERUs namely CMA, IEG and ADRTC too were joint coordinator till August 2019. Second, from September, 2020, AERC Visva-Bharati alone was entrusted with the responsibility to finalize methodology, study design and to provide an outline for generic issues only.

All the participating AERCs/AERUs were trained adequately on methodology and study design, but unfortunately there was no participation from AERC, Allahabad alone. This perhaps resulted in poor conception about nature of village study and tools used therein. Further, arbitrary time lines and delays are a generic problem that can be discussed with AER division too. To the best of our knowledge, none of the study started or submitted on time

However, on behalf of all the four coordinators, the undersigned sincerely apologize for arbitrary coordination and delay.

8. Overall view on acceptability of report:

The overall quality of the report is good and covered many issues decided during the Initiation Workshop held at IEG, Delhi and in the Methodology Workshop held at AERC, Visva-Bharati, Santiniketan. The report may be accepted after inclusion of changes suggested above.


Prof. B. C. Roy 04/09/2020
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Appendix- II

Action-Taken on the Comments Received from AERC Viswa Bharti University Shantiniketan

Comment-wise Action Taken on Draft Report Entitled “Village Survey Study in Uttar Pradesh Khatangiya Village

| Sl. No. | Issues of Comments | Action Taken |
|---------|--|---|
| 1 | Title of Report | Action not required. |
| 2 | Date of receipt of the draft report | Action not required. |
| 3 | Date of dispatch of the comments | Action not required. |
| 4 | Date of receipt of comments | 7 th September,2020 |
| 5 | Date of action taken on comments | 8 th to 10 th September,2020 |
| 6 | Date of dispatch of final report | 16-09-2020 |
| 7 | Comments on the objectives of the study | Action not required. |
| 8 | Comments on the Methodology | |
| a. | Sample size was 400 not 300 | (a) Moderate sample size was restricted to 300 after discussion with D. Mazumdar & Dr. B.C. Roy. |
| b. | Sampling was mentioned PPS. | (b) It was proportionate random sampling. |
| c. | Reference period of study. | (c) Reference period of study was 2018-19 but study was done in 2019-20. |
| d. | Concept of crop diversification index HHI is misunderstood. | (d) HHI is an inverse measure of crop diversification. It is not at all misunderstood. Please see Malana report page 17 & 18 and final report page 3. It is at farm level only and clear to us. |
| e. | But the calculations are erroneous. | (e) Calculation of HHI and CAGR have been rechecked and corrected. |
| f. | (i) But many of those included in Methodology are not used like water pollution etc. | (f) (i) Where in there were data, the same were included. |
| | (ii) Cost concepts etc. not used. | (ii) Cost concepts were excluded and others were included on availability of data. |
| 9 | Comments on Analysis, Organization, Presentation etc.: | |
| A. | Generic Issues/comments | |
| a. | Typographical errors & discrepancies | (a) Checked and corrected |
| b. | Discussion lacks focus on changes | (b) Possible focusses have been well attempted. |

| | | |
|----|---|--|
| c. | The concept of percentage change over time has different meaning. | (c) The explanation on percentage change or any formula was not given in the study design. Thus, what was possible on the data available was done. Please see Chapter-II |
| d. | The concept of reading competency (ASER toolkit) is misunderstood. | (d) Although, GDS- III was optional, but since you have included it in the analytical tables, it was attempted with the help of schedules and toolkits only. Deep and thorough analysis was not at all possible. |
| e. | Calculation of CAGR and Crop diversification magnitude are faulty. | (e) SI (Simpson Index) was not attempted. Only HHI (Harfindhal Harscimen Index) was attempted on farm level and two seasons. Please see 38 page of final report and page 17 & 18 of Malana report (Shimla H.P.) |
| f. | Policy recommendations should be based on findings of the study. | (f) All the 15 policy recommendations have been predicted based on only the main findings of the study. Please go through the findings thoroughly. |
| g. | Executive summary is not included. | (g) Executive summary is included in the final report after the action taken on the comments by peer review and finalization of the study report. |
| B | Specific Issues/comments | |
| a. | Page 61- All households ate poor quality food that they did not like. | (a) All households (100%) had not responded that they ate some poor quality foods that they really did not like. Checked and found it was written correctly. |
| b. | In page 65,66,67 calculations should be on distribution of households by occupation and not by castes. | (b) Tables V.1.1, V.1.2 and V.1/3 on pages 65, 66, 67 include the distribution by livelihood groups too. The percentage distribution have been recalculated in the last column. |
| c. | In page 69 increased to 196.83 to 158.69%. please check. | (c) Checked and corrected. |
| d. | Page 70 during last 55 years irrigation intensity declined and cropping intensity remained stagnant. | (d) Checked and corrected. The irrigation intensity declined slightly is correct. |
| e. | Page 71 Lorenz curve not plotted. In footnotes similar mistakes on page 89 & 90. | (e) Lorenz curve plotted. On page 89 & 90 corrections have been done. |
| f. | Page 75 if the area under pulses decreased from 21.83 to 0, how the CAGR can be -1%. So is the case with their growth rate. | (f) The area under the pulses was nil since last 5 years (2014 to 2019). CAGR and growth rate in other crops have been checked and found correct. |

| | | |
|-----|--|---|
| g. | Page 77 and 78 values of HHI and SI are self contradictory. | (g) Table-V-2.7 on page 77 contains extent of crop diversification on the farms by HHI only and it is correct. In Table-V-2.8 on page 78 the pattern of crop diversification across size-groups was of complete and special diversification of HHI=0.01 or -0.01 on all the farms and the same is correct. SI was not tested. SI was written by you in table which was left unchanged and the same has been changed/ corrected. |
| 10. | References Specific review on village study is missing. | Reviews were collected beyond our level best efforts. The reviews on village study were not available on line. In libraries these are available. We tried those also but could not collect much. |
| 11. | General Remarks Regarding arbitrary coordination system in AERCs and AERUs. | As a matter of fact in chapter-II under the heading “ <u>Limitations of study</u> ”, prima-facie this was the most-hit limitation not only for this study but for all the All India Coordinated studies since the inception of Coordination system. |
| 12. | Overall view on Acceptability of Report. The report may be accepted after inclusion of the changes suggested. | Almost all the changes/corrections as per the valuable comments from the peer reviewer/ coordinator have been included / incorporated appropriately in the final report by us. |