

Baseline survey report
June-2014

Mahila Kisan Sashaktikaran Pariyojana (MKSP)



**Project area: Chhotaudepur and Jetpur Pavi Blocks of
Chhotaudepur District**

Submitted to:
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Shroffs Foundation Trust

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Vadodara

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ABBREVIATIONS

APL	Above Poverty Line
BPL	Below Poverty Line
CBO	Community Based Organization
CU	Chhotaudepur
FGD	Focused Group Discussion
FLD	Front Line Demonstration
HR	Human Resources
INM	Integrated Nutrition Management
IPM	Integrated Pest Management
LRP	Local Resource Person
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MKSP	Mahila Kisan Sashaktikaran Pariyojana
MoRD	Ministry of Rural Development
NGO	Non Government Organization
NRLM	National Rural Livelihood Mission
PIA	Project Implementation Agency
PJ	Jetpur Pavi
PRI	Panchayati Raj Institution
SFT	Shroffs Foundation Trust
SHG	Self Help Group
SS	Samaj Shilpi
VLO	Village Level Organisation

Chapter I: Introduction

1.1 About Shroffs foundation

The Shroffs Foundation Trust (SFT) was instituted in 1980. Since then the trust has made rapid strides in rural development. The Trust aims at assisting the all round economic, social and cultural development of the people in more than 600 villages of Vadodara and Kachchh districts.

In the tribal area of Chhotaudepur, SFT began its rural development journey with watershed program in 1995 by undertaking soil and water conservation activities; which is also expanded as a full-fledged development centre covering the programs like, natural resources management, agriculture development, animal husbandry, education, health and livelihood securities with active involvements of the community and building their capacities to own up and scale up the developmental process.

The success that has been achieved in improving the quality of life and income levels of the tribal community in these clusters have proven the validity of a developmental model that SFT envisaged and implemented over this period.

Women empowerment through Self Help Groups

While watershed management program brought food security and reduced migration in Chhotaudepur area, Self Help Groups and income generation programs have paved the way for women empowerment. The foundation implicitly tried to initiate work with tribal women mainly by providing literacy; initiate health services in Rangpur; upgrade their skills and provide loans through Self Help Groups (SHGs) for income generation activities. Women recognized their own capacities and the immense potential to earn by honing skills like embroidery, mirror and bead work.

From the experience of last three decades, SFT visualized that once women achieved economic freedom, other changes would gradually follow. Thus, the SHG journey started in 1998 and the entire process had several phases that included a mix of NABARD /CAPART supported SHGs and finally culminated in SGSY Special project supported SHGs in 2008. The final culmination of this process was meant to be withdrawal of funds from DRDA but the SHGs have rather continued their sustainable course by associating with socially and economically useful new developmental programs.

1.2 Background

The tribal area of Chhotaudepur district is among the most backward areas of Gujarat. It predominantly consists of tribal population mostly dependent upon rain-fed agriculture on their small and marginal land holdings.

In this tribal area entire family is engaged in agriculture and women contribute more than male members of the family. However women do not get due recognition and empowerment as they are not recognized as farmers hence never get due benefits.

Government of Gujarat has promoted SHGs of women on large scale as main tool for poverty alleviation in the district. They are named as Sakhi Mandals. There is a great opportunity to link these women members with agriculture based livelihood activities. It is in this sense, the present project “Mahila Kisan Sashaktikaran Pariyojana (MKSP)” addresses the issue of women’s participation in agricultural to enhance their livelihoods.

SFT is implementing this project with 7320 small and marginal women farmers spread over 91 villages of two tribal blocks of Chhotaudepur district.

1.2.1 Project Description

Objective:

To organize and empower 7320 women farmers in groups and bring them together under the umbrella of common interest based Cooperative society at Block level with an ultimate vision of achieving their active contribution in agriculture sector of tribal blocks of Chhotaudepur and Jetpur Pavi in three years.

The project is to be implemented with 7320 small and marginal women farmers spread over 91 villages of two blocks i.e. Chhotaudepur and Jetpur Pavi of Chhotaudepur district. There will be total 12 Clusters of villages in the project area.

The villages / areas are those where Shroffs Foundation Trust (SFT) has been working for water resources development, agricultural productivity enhancement and other programmes aimed at sustainable development since last 19 years. SFT has promoted SHG groups as well as a block level federation of women’s cooperative society named as *Shardadevi Gamudhyog Utpadak Sahakari Mandali (SGS)*.

Since this existing block level Apex body is already into the agriculture sector, their core functioning will remain same however they will be further strengthened by providing inputs in relation to organizational development and agriculture based livelihood interventions.

The trained team of Community Resource Persons (CRPs) will help the Cluster Level Federation (CLF) which will have a Governing Body to provide directions in the federating process. Once the group is stabilized at cluster level it will be linked to the block level apex body. Representative Mahila Kisans of cluster level federations would be the members of the block level apex body and become equity holder. 7320 women farmers are envisaged to be under these block level federation as members. The block level federation will eventually become the local institution of women farmers to address the issues of agribusiness and agriculture extension services along with its existing businesses. Executive Committee of SGS will provide the overall direction to the whole activity.

CRPs from the same villages or nearby villages will be groomed on institutional and technical aspects of agriculture with an ultimate objective of becoming key service providers in the local area.

Training, exposure visits and constant handholding support to the women's institutions and CRPs will be the key strategic elements of the project. The block level federation and the CRPs are expected to lead the project implementation with facilitation support by the project staff of implementing agency.

Agriculture based technology introduction, validation and adoption will be the key to bring in positive change in the livelihood status of women and change in asset base. For introduction and validation of agriculture technologies there will be a localized version of the Farmers' field schools in each village. Members of the groups will participate in these schools to acquire knowledge and skills.

1.2.2 Key components of the project:

These are the main set of activities:

Institution Building:

This will involve formation and development of village level and cluster level women farmer's federations in the first step. The cluster level federations will further federate into a block level federation as an apex body. According to the geographic locations 91 village level organizations and 12 cluster level federations will be formed and further linked with the existing apex body SGS, Chhotadepur as mentioned in 1.2.1. These institutions will be groomed in such a way that they develop and establish systems and procedures related to administration, accounts, human resource management, development of business plans and

their implementation, statutory compliance for strengthening the overall institution building process.

Cadre development:

Progressive women farmers will be identified through intensive community processes and they will be groomed as CRPs by strengthening their capacities. They will go through intensive trainings along with exposure visits with a vision to strengthen their knowledge of agriculture practices and enhance their capabilities as a community trainer for enhancement of sustainable agriculture practices in the project area. The project envisages grooming of 120 CRPs to maximize the impact of the project.

Promotion of sustainable Agriculture practices:

- 72 Farm Schools will be established and equipped with training and education material with demonstrations of drudgery reduction tools, Vermicompost, Farm Yard Manure (FYM) and Bio-pesticides along with soil testing facilities. The women farmers will get knowledge and exposure at village level itself.
- Training and education on sustainable agriculture practices will be the central focus of the project. Land and Water Management, Integrated Nutrient Management, Integrated Pest Management, General Problem Management related to agriculture will be the key aspects.
- SMS based extension services for women farmers to access information on weather, cropping practices and market rates etc.
- Soil testing, analysis and recommendations
- Seed Security program – promote local seed preservation practices
- Vermicomposting and Farm Yard Manure – Promotion of balance between organic and inorganic agricultural inputs
- Farmers Diary – Technical guidance to the farmers.
- Agriculture based livelihood interventions such as – trial and demonstration of good agriculture practices, replacement of varieties, use of bio-fertilizer, crop spacing, kitchen vegetable garden etc.

1.3 The Mahila Kisan Sashaktikaran Pariyojana (MKSP) Project

The MKSP program envisages holistic empowerment of women farmers so as to increase their participation in agricultural and domestic decision making while sufficing them with the necessary skills and knowledge to ensure the same. The MKSP is being implemented by Shroffs Foundation for the years 2013-17.

1.3.1 Overall Project objective

To build capacities and empower women farmers to establish women led institutions and linkage with agriculture extension system by providing knowledge and technologies for

sustainable agriculture practices so as to achieve their visibility, reduce drudgery and enhance income in Jetpur Pavi and Chhotaudepur tribal blocks.

The main objectives (as per MoRD guidelines) of the project are:

- To enhance the productive participation of women in agriculture
- To create sustainable agricultural livelihood opportunities for women in agriculture
- To improve the skills and capabilities of women in agriculture to support farm and non-farm based activities
- To ensure food and nutrition security at the household and the community level
- To enable women to have better access to inputs and services of the government and other agencies
- To improve the capacities of women in agriculture to access the resources of other institutions and schemes within a convergence framework.
- To enhance the managerial capacities of women in agriculture for better management of biodiversity

1.3.2 The project strategy

The Foundation envisages the empowerment of women farmers through the following:

1. Institutional development and strengthening,
2. Training and Capacity Building,
3. Ensuring Food and Nutritional Security, and
4. Drudgery reduction.

The project aims to reduce the dependence of the beneficiaries on external factors (climate, markets, inputs availability, etc) and to strengthen their inherent capacities. Major elements of the intervention emphasize the use of sustainable and natural ways of farming and reducing the use of chemicals. For ensuring food security to the beneficiary households, small kitchen gardens are proposed to grow vegetables for self consumption. A particular emphasis is on developing skills related to agriculture and allied activities. It is thus the major part of the project focuses on providing trainings on good agriculture practices, cattle rearing, and marketing of the end produce. Interventions in the project would largely be implemented by a section of the beneficiary group themselves. This section of the group would be trained to become the **CRPs** of the beneficiary group. To give these CRPs their own identity in the village, they are named as “*Samaj Shilpi*”. To facilitate better interaction with women farmers all CRPs are women from the village who are willing to contribute to the development of their village. There will be 1 **CRP on every 60 farmers**, to be identified and trained, to act as

grass root worker on daily wage basis. The CRP should necessarily be a local person and a progressive farmer. Women SHG members are the target beneficiaries under the project. Based on the monthly feedback from SHGs, on service delivery capacity of CRPs, Shroffs Foundation will continuously upgrade their skills.

1.3.3 The project details

The project covers a total of 7320 beneficiaries from Jetpur Pavi and Chhotaudepur blocks. Selection of beneficiaries was exclusively done from the NRLM beneficiary list provided by GLPC as directed.

1.3.4 The MKSP Project Rationale

Proposed project addresses the issues of women farmers like,

1. Poor agriculture productivity and food insecurity
2. High level of borrowing from moneylenders to supplement livelihood deficits, and consequently high levels of debt
3. High level of seasonal distress migration, particularly for debt service and due to deficit in employment opportunities

Present Status of Women in Farming

- Used only as Labour in Agriculture/ Animal Husbandry
- No exposure or limited exposure to Agriculture related outside world
- No/limited decision making on farm related issues/works
- Drudgery prone farm operations
- Nutrition issues in Women and Children
- Gender issues are prominent in farm related works, purchase and innovation etc.
- Health issues related to cooking – cooking method
- No recognition of women's contribution to her family
- No collective voice in Gram Sabhas or Panchyats

The proposed project addresses the above issues by –

- Organizing women farmers at village level Groups, cluster level federations and subsequently at the apex level to ensure sustenance
- Invest heavily on the capacity building of the federation members, and community resource person to put them in leadership role and building social capital in the villages
- Introducing, validating and disseminating various agriculture based livelihood initiatives to create asset base at the family level to enhance their income and food security

- Cluster level federation with support of block level federation integrates small holders with the market and knowledge resources to obtain farm inputs and services of high quality and fair prices for their produce. The block level federations would be an effective platform to carry out an alternative system of extension mechanism

Out of total workforce in the two blocks, about 46.2 % are women (census -2001). Manual activities such as transplanting of seedling, weeding, harvesting, transporting the harvest, threshing, drying of hay, etc. are mainly done by women. During work days, women wake up at around 5 am to finish cooking, cleaning and feeding of children before going to work by 7.30 am. They are able to go to bed only at around 10 pm. Despite the fact that women are major producers of food in terms of their time spent in agriculture and allied activities and the value they add to the overall activity, they remain less visible as farmers, in comparison to men. In majority of cases, women do not have any role in decision-making in the household, or pertaining to agricultural sector and even in important family matters. At times, men consider it disgraceful to accept the decisions of women. In majority of cases restricted mobility of women due to cultural taboos and their lack of time due to heavy work load are causes for low exposure of women to specialized farming techniques.

Any training and skill building thus provided will not only make them more capable and effective but will also ensure that their efforts are made in the right direction and are ultimately fruitful.

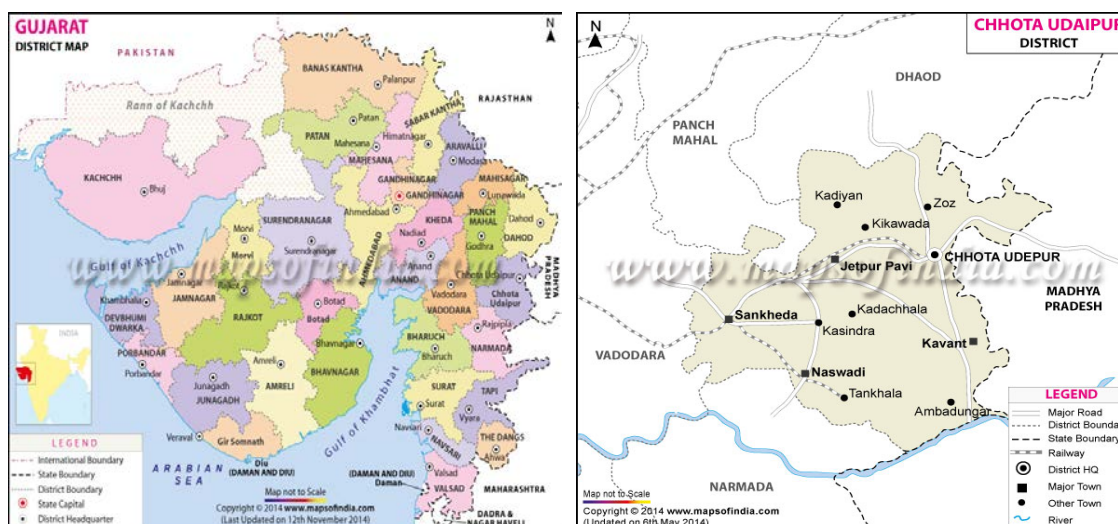
Capacity building will also ensure social empowerment as their role and status will also be elevated due to increased productivity. Awareness generation and institutional reforms will bring in credibility to their roles, status and their value in society. Participation in livelihood based institutions is an effective strategy of achieving it. Trainings on institution building are essential feature of the proposed MKSP project. Bulk marketing of produce through established farmer producer companies is another major intervention under the project. This empowerment of women farmers in the project area would pave the way to reform the agricultural sector in the region.

1.4 Project Area

The Tribal area in Chhotaudepur district is among the most backward areas in Gujarat. It has predominantly the tribal population mostly depending upon rain fed agriculture on their small and marginal land holdings. The project covers 7320 small and marginal women farmers spread over 91 villages of two tribal blocks viz. Chhotaudepur and Jetpur Pavi. Figure 1.1 shows geographical location of these two blocks.

The Chhotaudepur and Jetpur Pavi blocks of Chhotaudepur district are drought prone area. The main livelihood of the population is rain-fed farming, collecting and selling raw forest produce, etc. During the lean period, they migrate in search of labour work in all over Gujarat and even in neighbouring state of Madhya Pradesh.

Figure 1.1: Location map of Project area



In these tribal areas, entire family is engaged in agriculture and women contribute more than male members of the family. However, women do not get due recognition in this area and lack empowerment as they are not recognized as farmers and so never given their due place in the society.

As main tool for poverty alleviation, Government of Gujarat has promoted SHGs of women named Sakhi Mandal in this district on a large scale. Nearly 30000 women are SHG members in the selected blocks. This is good opportunity to link these women members of Sakhi Mandals with agriculture based livelihood activities. Hence, the present proposal addresses the issue of women's participation in sustainable agricultural development to enhance their livelihood in the project area. Project envisages the promotion of proposed programmes by women and improvement in the crop yields through intensified cropping pattern by the skilled women farmers. The SHGs will be brought under umbrella of block level cooperative society, SGS.

Community Resource Persons are to be groomed on institutional and technical aspects with a view that they will be serving as service providers in the local area.

The soil health improvement is another important aspect of the proposal.

Training, exposure and constant handholding to the Women's institutions and CRPs will be the key strategy of the project. The Women's Institutions and the Local Resource Persons are expected to be leading the project implementation with facilitation support by the project staff.

1.4.1 Demographics

As per the Census of India (2011), Chhotaudepur had a total population of 544849 of which Males constitute 51% and females 49% respectively. Chhotaudepur has an average literacy rate of 69% which is higher than the national average of 59.5%; with male literacy of 76% and female literacy of 62%. Eleven percent of the population is under 6 years of age.

Human capital is the most important resource for development of any area. If this resource is used properly, it could be an asset otherwise it becomes a burden. In Chhotaudepur district, vulnerability of human resource is more when compared to their productivity. If the existing population can be converted into human capital of better quality, then the district can raise its rank in human development index of Gujarat state.

Strength of the human resource of this district is that, people are very hard working and can perform very well in very harsh climatic conditions also. On other hand, Illiteracy and lack of skilled manpower has been a major drawback for the development process in the district.

Chhotaudepur Block:

The Latitude and Longitude of Chhotaudepur block is 22.3200° N and 74.0100° E respectively. The block is spread over on an area of 76546 ha. The block head quarter is Chhotaudepur. This block comprises of 144 villages and 44 village Panchayats. Rural population of this block is 107357; the average family size is 7 and sex ratio is 989. Caste wise classification of population shows that percentage of schedule tribe is 80.66 and schedule caste is 2.94. The percentage of literacy is 39.91 % among male and 21.68 % among female populations.

Jetpur Pavi Block:

The Latitude and Longitude of Jetpur Pavi is 23.0023 and 70.8937 respectively. The block is spread over an area of 80564 ha. The block head quarter is Chhotaudepur. This block comprises of 130 villages and 91 village Panchayats. Rural population of this block is 167837; the average family size is 7 and sex ratio is 960. Caste wise classification of population shows that percentage of schedule tribe is 67.02 and schedule caste is 2.09. The scenario with respect to literacy is 33.46% for male and 64.69 % for female population in the area.

The project area demographic details are vital for the successful planning and implementation of any development intervention. Table 1.1 given below summarizes demographic profile of Chhotaudepur and Jetpur Pavi blocks where MKSP project is to be implemented by Shroffs Foundation Trust, Vadodara.

Table 1.1: Demographic details of project blocks

Details	Chhotaudepur	Jetpur Pavi
Total Villages	142 villages	210 villages
Total Households	41830 HH	41621 HH
Average Family Size	5.7 persons	6 persons
Total Population	241377	225894
Male	121337	116158
Female	120040	109736
Total ST Population	211506 (87.62 %)	175183 (78%)
Male	106064	89810
Female	105442	85373
Total SC Population	7861 (3.25 %)	5463 (0.2%)
Male	4060	2562
Female	3795	2668
Literacy Rate	36 %	9.58 %
Male	42.55 %	4.41 %
Female	29.38 %	9.35 %
Total Area	76,144.72 hectors	80,563.16 hectares
Total Forest Area	23345.18 hectors	9247.57 hectares
Total Irrigated area	6250.90 hectors	17854.48 hectares
Total Non Irrigated area	29904.16 hectors	34318.74 hectares
Non cultivable area	8106.76 hectors	5100.57 hectares

Chapter II: About Baseline Study

The baseline study mainly aims to record the current status of the project beneficiaries, with respect to the proposed MKSP interventions. The primary objective is to construct a *baseline* against which any relevant interventions in the area could be evaluated. Apart from collecting general information, the study revolves around the main objectives of the MKSP project and would focus on concluding the current situation of the project area with respect to those objectives.

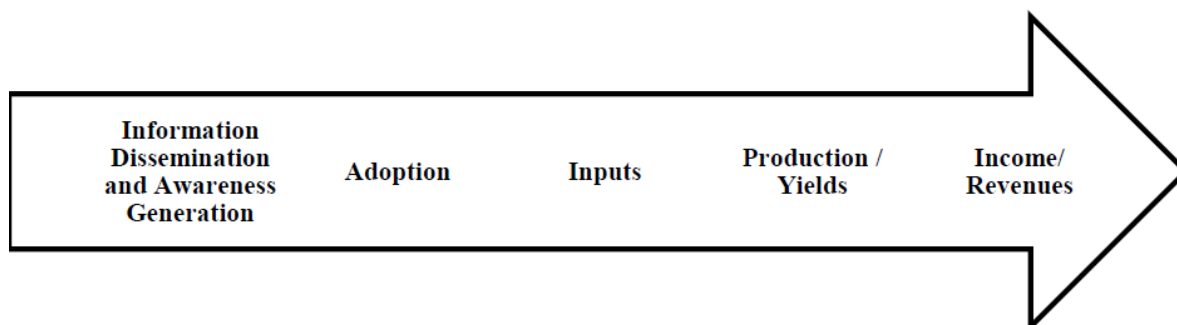
The baseline study thus focuses on the following aspects:

1. Knowledge and awareness levels of the beneficiaries related to intervention areas of sustainable agriculture, cattle care, marketing, etc.
2. Adoption levels of the proposed MKSP interventions such as Good Agricultural Practices (GAPs), good cattle rearing practices, etc.
3. Current agricultural inputs given at the field level
4. Costs of such inputs
5. Yield generated from the present agricultural and allied practices
6. Prevailing market rates for the end produce and revenues fetched by the farmers

Furthermore, the study would also help to identify focus areas to guide the implementation of the MKSP project.

2.1 Study Approach and Methodology

The baseline study maintained the following flow of the proposed MKSP interventions. Information for all these stages was gathered for an overall assessment of the prevalent conditions of women farmers selected as project beneficiaries from the area. Table 2.1 categorizes the data collected for different stages.



Information for all these stages was gathered for an overall assessment of the prevalent conditions of women farmers in the area. The following Table 2.1 categorizes the data collected for different stages.

Table 2.1: Data collection for different stages

Sr.No	Stage	Specific data collected	Purpose
1	Information Dissemination and Awareness Generation	<ul style="list-style-type: none"> • Awareness for Good Agricultural Practices (GAPs) and Marketing • Need for Training and Capacity Building • Institutional Participation 	To assess and freeze the awareness levels of the beneficiaries related to important MKSP interventions
2	Adoption	<ul style="list-style-type: none"> • Area under Sustainable Agriculture (SA) • Adoption levels for GAPs, Kitchen Gardens • Good Cattle rearing practices, etc. 	To assess and freeze the adoption levels for the same
3	Inputs	<ul style="list-style-type: none"> • Financial/ Material Inputs for agriculture <ul style="list-style-type: none"> ○ - Total and Crop wise ○ - Organic / Inorganic inputs • Financial/ Material Inputs for allied activities 	To arrive at the different inputs made by the beneficiaries and the subsequent costs incurred
4	Production/ Yields	<ul style="list-style-type: none"> • Production Quantities <ul style="list-style-type: none"> - For each crop - For vegetables - For allied activities 	To arrive at the Yields for the different products
5	Revenues/ Outputs	<ul style="list-style-type: none"> • Price at Market <ul style="list-style-type: none"> - For each crop/ vegetable - For milk/ others • Transportation and other costs • Prevalence of Bulk Marketing 	To arrive at the Marketing cost incurred and the revenues and the prices earned for each produce

2.2 Sampling and Data Collection

To account for the high migration in the area and to attain greater effectiveness and accuracy, a large sample size of 50% of the first year MKSP beneficiaries was considered for the baseline survey. The respondents were selected through simple random sampling method applied to 8 clusters in Chhotaudepur and 4 clusters of Jetpur Pavi blocks.

2.3. Coverage

The survey covered a total of 1679 respondents from both Chhotaudepur (1172) and Jetpur Pavi (507). The following table shows the number of respondents for the two blocks.

2.4. Data Collection

The data was collected primarily through field level survey which involved direct interview with the beneficiary women farmers. A detailed questionnaire was administered (Ref Annexure 1) accounting for all the stages of the MKSP intervention. The questionnaire was prepared out of the extensive experience of the technical staff of the organization having worked in the intervention area for more than a decade. The questionnaires were filled by trained Community Resources Persons (Samaj Shilpis) belonging to the same community. Extensive preparation went into the training of the surveyors. A total of two rounds of training involved both classroom sessions and on-field demonstrations for two days each. It was ensured that the surveyors understand the survey questionnaire and procedures in a clear way.

2.5 Statistical method for data analysis

The data was collected at each of the blocks to undergo further scrutiny. Filled up forms were observed carefully for any lapses/ errors and sent back accordingly for corrections. The raw data was further edited to remove any discrepancy through range and consistency checks. Thus a highly reliable data set was arrived at. The data was finally entered by in-house professionals using the latest software tools. The coded information was computerized with the help of excel programming. Finally for the analysis, the variables were suitably categorized to suit different types of analysis. Various statistical analysis including multivariate analysis was done using the latest SPSS software package. The analysis tables generated through SPSS software was further translated in to tables and figures as suitable for the purpose of analysis.

Chapter III: Profile of beneficiary households

3.1 Demographic Profile

Demographic capital is a crucial factor for the success or failure of any development intervention in any area. The Baseline survey also mapped the demographic profile of the project area, primarily focussing on the families of respondents from the project beneficiaries. Total 1679 families covered under baseline survey have a total population of 9024 persons which constitutes 4616 male and 4408 female among them. The gender ratio in these families largely follows the block level trends. The block wise break up is shown in the table 3.1 below.

Table 3.1: Demographic profile of families covered under baseline study

Gender of Family Member						
					Total	
	Chhotaudepur		Jetpur Pavi		N	%
	N	%	N	%		
Male	3184	50	1432	54	4616	51.2
Female	3189	50	1219	46	4408	48.8
Total	6373	100	2651	100	9024	100

The age wise percentage of the family members is shown in table 3.1-A below. The 9024 members in the 1679 families are divided in to seven age groups. According to survey the family members falling in the age group of 16 to 39 years which constitutes 46% of the total population. This indicates the fact that families covered in baseline are young in age. About 23% of total male as well as female members fall in this age group. At block level, the percentage of female falling in this age group are higher than male members for chhotaudepur block whereas it is reverse in case of Jetpur Pavi.

The age group falling between 0 to 15 years and 50 years and above are major groups. Both of these groups need caring and support. The overall young population between 0 to 15 years of age (school going children) is 30.6% of total population. The total population of this age group for surveyed families in Chhotaudepur and Jetpur Pavi talukas is 31.7% and 28.4% respectively. Similarly, population having age of 50 years and above in Chhotaudepur and Jetpur Pavi talukas is 5.9% and 7.8% respectively. If these two categories of age groups were to be combined then they would form 37.6% and 36.2% of the total population in the surveyed families in respective blocks. This is the population who spent major time at home and also need extra care, which increases household work load for women in the family.

This implies that women members in Chhotaudepur taluka are having slightly higher work load at home than their counterpart from Jetpur Pavi block.

Table 3.1-A: Age wise percentage of family members

Age Group	Chhotaudepur		Jetpur Pavi		Total	
	M	F	M	F	M	F
	%	%	%	%	%	%
0-6	5.1	5.2	5.2	3.1	5.1	4.6
7-15	11.4	10	11.7	8.4	11.4	9.5
16-25	11.2	10.5	9.7	8.6	10.7	9.9
26-39	11.6	13.3	13.7	12.9	12.2	13.2
40-50	7.7	8.2	9.3	9.8	8.2	8.7
51-60	1.7	1.6	2.2	1.9	1.9	1.7
60+	1.3	1.3	2.3	1.4	1.6	1.3
Total	50	50.1	54.1	46.1	51.1	48.9

3.2. Education profile of beneficiaries

Findings of the baseline survey shows that about 32% of all members in surveyed families are illiterate. Only 49% of the total members in the family have studied up to secondary school, while merely 11 % of the family members could gain education higher than secondary level. As shown in table 3.2; 21.6% female in the family are illiterate (Illiterate plus functional literate) as compared to 13.1% among male members. The female illiteracy is higher in Chhotaudepur (23.3%) than in Pavi Jetpur (17.6%).

The percentage of children who have attended or attending school (primary to higher secondary) is 32.2% of total male and 23.2% of total female. At taluka level, population who has either attended or are attending the school is 29.3% of total male and 22.4% of total female in Chhotaudepur, while in case of Jetpur Pavi it is 41.1% (male) and (25.3%) female. This shows that overall gender discrepancy exists for girl child education, but the gender discrepancy is lower in Chhotaudepur block and much higher in Jetpur Pavi block.

Table 3.2: Gender wise education in the surveyed families

Education	Chhotaudepur		Jetpur Pavi		Total	
	M	F	M	F	M	F
Illiterate	14.8	22.3	6.6	17.2	12.4	20.8
Functional Literate	0.8	1	0.4	0.4	0.7	0.8
Primary	15.6	12.8	21.1	13.2	17.2	12.9
Secondary	8.5	6.4	12.7	8.6	9.7	7
Higher Secondary	5.2	3.2	7.3	3.5	5.8	3.3
Diploma	0.2	0.1	0.1	0.1	0.1	0.1
Graduate or Above	1	0.2	1.7	0.4	1.2	0.3
N/A	4	4.1	4.1	2.6	4	3.7

The table 3.2 –A below shows education levels in surveyed family. This is further analysis of education status based on family size. This shows that majority of the family members have not acquired the desired levels of education necessary for government and private sector employment opportunities in the current scenario. Further analysis of family size-wise education among the members in the family reveals that illiteracy is more prevalent among smaller families compared to larger families. Against overall illiterate population of 32%, the illiteracy among families with 1 to 3 persons is 40%. Table 3.2-A below provides with the educational profile of beneficiaries.

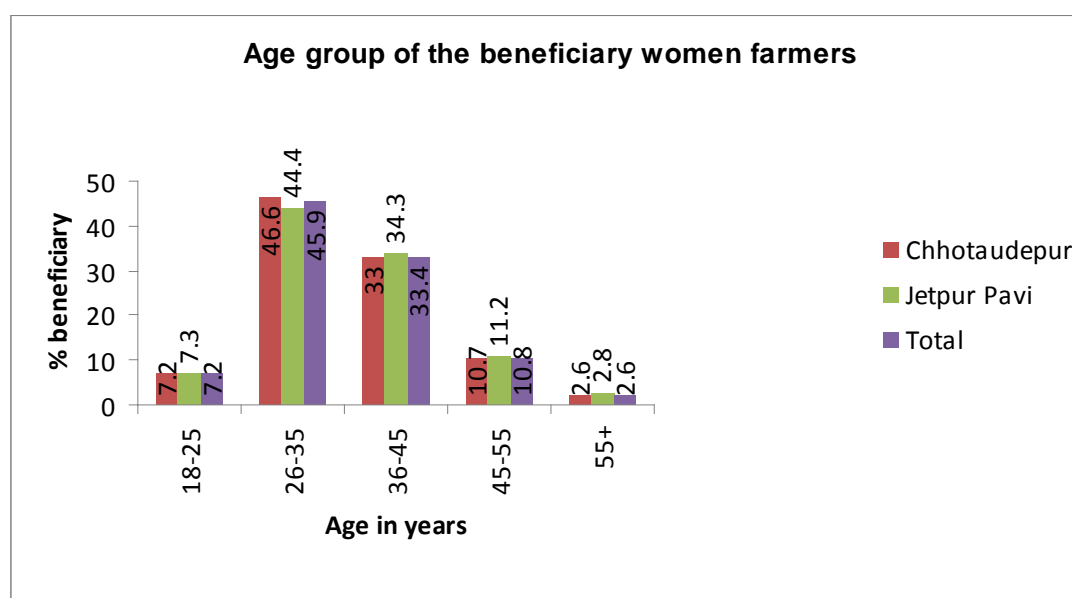
Table 3.2 -A: Education levels in the surveyed families

Education	Family Size							
	1 to 3		4 to 6		7 and Above		Total	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Illiterate	176	40.1	1769	31.4	995	33.8	2940	32.6
Functional Literate	9	2.1	81	1.4	14	0.5	104	1.2
Primary	95	21.6	1682	29.8	938	31.8	2715	30.1
Secondary	81	18.5	1021	18.1	413	14	1515	16.8
Higher Secondary	46	10.5	567	10.1	207	7	820	9.1
Diploma	1	0.2	13	0.2	5	0.2	19	0.2
Graduate or Above	9	2.1	84	1.5	37	1.3	130	1.4
N/A	22	5	422	7.5	337	11.4	781	8.7
Total	439	100	5639	100	2946	100	9024	100

3.3 Profile of women beneficiary farmers

The Figure 3.1 below shows that more than 79% of the total women farmer beneficiaries are in the age group of 25 to 45 years of age. Seven percent of the total beneficiaries are below 25 years age. Only 13% of beneficiaries are in the age group above 45 year. Thus, adoption of the learning from the MKSP programme will remain with the family for coming 20-40 years period which is adequate for bring change. Additionally, the age group between 25 to 45 years is considered as most matured age group for learning and the fact that most of the project beneficiaries come from this age group is very good sign for the sustainability of the programme interventions.

Figure 3.1: Age profile of beneficiaries



The age group wise distribution of beneficiaries is shown in table 3.3 below.

Table: 3.3 Age-group of beneficiaries covered under the baseline survey

Age group of Beneficiary						
Age group of Beneficiary	Chhotaudepur		Jetpur Pavi		Grand total	
	No	%	No	%	No	%
18-25	84	7.2	37	7.3	121	7.2
26-35	546	46.6	225	44.4	771	45.9
36-45	387	33	174	34.3	561	33.4
45-55	125	10.7	57	11.2	182	10.8
55+	30	2.6	14	2.8	44	2.6
Total	1172	100	507	100	1679	100

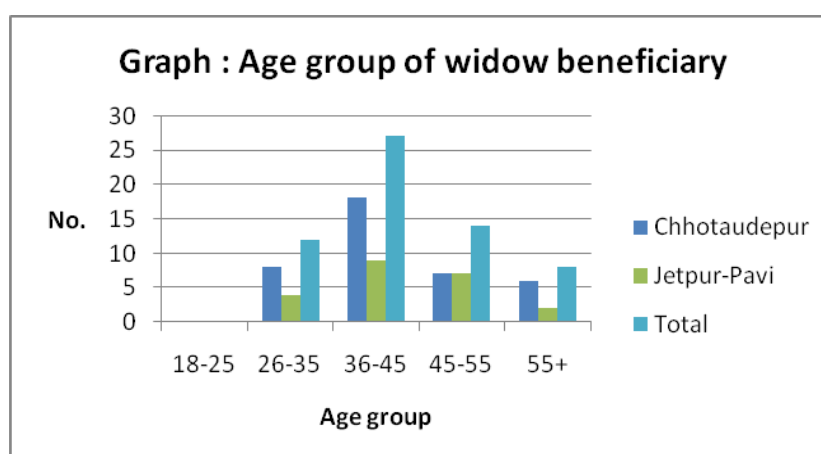
3.4 Marital status of Beneficiaries

Majority of beneficiaries are married (94%). Apart from that there are sub categories under single women respondents reported as separated, divorced and widow. There are total 69 single women households among the surveyed 1679 families. Block wise marital status of respondents is presented in the Table 3.4 given below. The majority of single women are in the age group of 25 to 45 years as presented in the Figure 3.2 below.

Table 3.4: Marital status of the surveyed beneficiaries

Marital Status	Chhotaudepur		Jetpur Pavi		Total	
	No.	%	No.	%	No.	%
Unmarried	21	1.8	3	0.6	24	1.4
Married	1107	94.5	479	94.5	1586	94.5
Separated/divorced/ widow	44	3.7	28	4.9	69	4.1
Total	1172	100	507	100	1679	100

Figure 3.2: Age group of single women beneficiaries covered under survey



3.5 Family size of surveyed Beneficiaries

Secondary data about the area suggests that the context of family size varies across the district. The state is having 5-6 persons per household, whereas the district average is 6-7 persons but in case of the tribal areas of the district, the average family size is 6 persons per household. Generally majority of farmer families hold very less portion of land. Average land holding among the respondent beneficiaries is 1.04 hectare per family. It reveals that

majority of farm families are resource-poor. Land in the project districts is undulating, lateritic, water holding capacity is less. Agriculture in this part is mostly rain fed. Per capita income of people living in this area is much lower in comparison to the State average. As a result, other indicators of human development like literacy rate, women literacy rate are poor and IMR, MMR are also high. Given this situation, the condition of women in these households is much more vulnerable.

Survey findings: Family size of main beneficiaries

Findings of the baseline survey suggest that the family size of the beneficiary households is in the range of 4 to 6 person per family. About 67% families in Chhotaudepur and 70% families in Jetpur Pavi blocks are having 4 to 6 person in the family. It is also found that about 9% families are having less than 3 persons in the family. This implies that majority of families have enough work force to meet their livelihood needs. Figure 3.3 below depicts taluka-wise distribution of family size and number of persons per household.

Figure 3.3: Family size distribution among the surveyed families

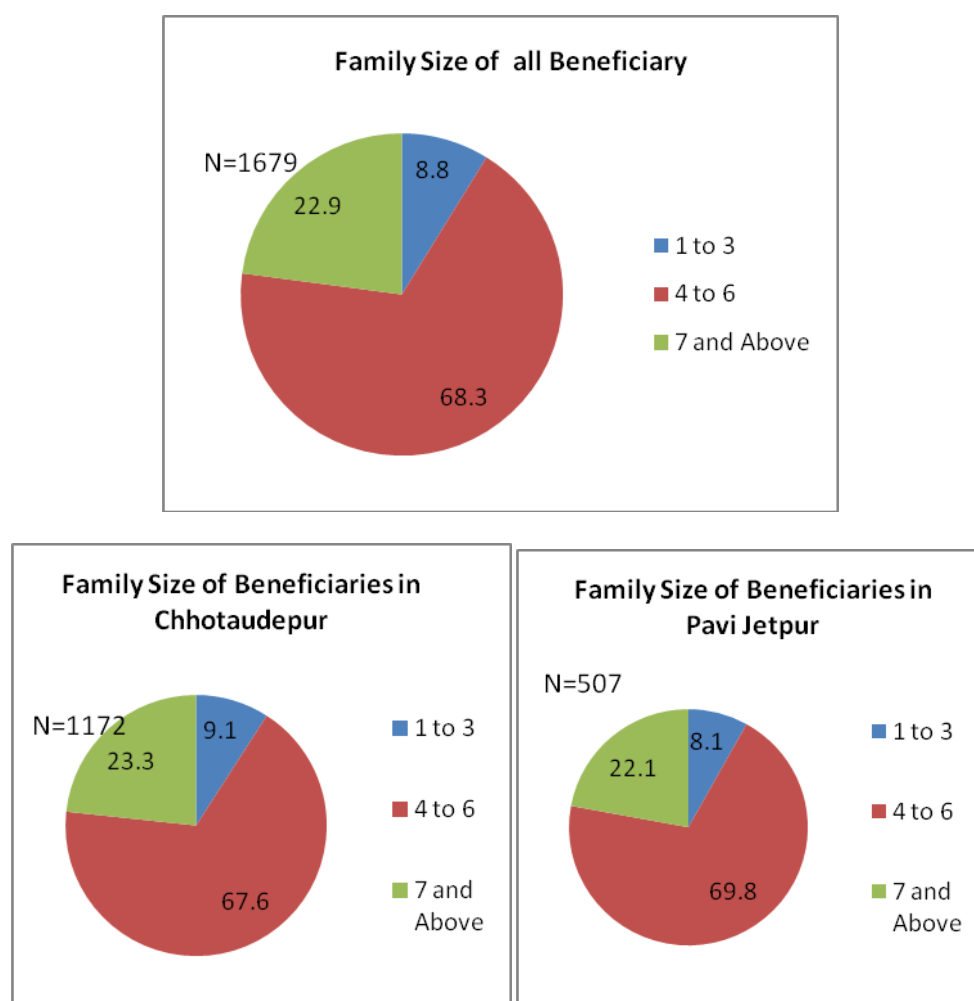
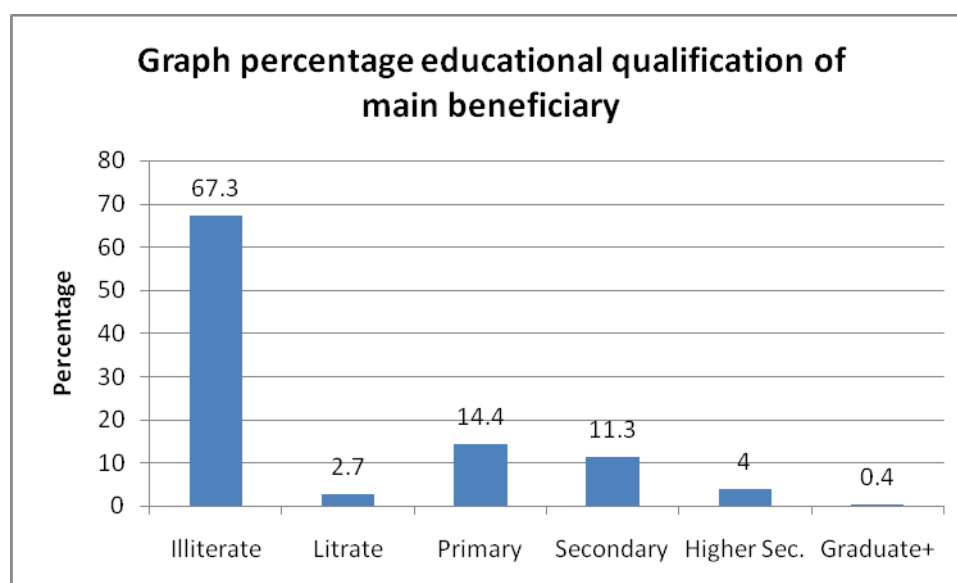


Figure 3.3 suggests that 68% families in the project area including both the talukas have family size of 4 to 6 person per family whereas 23% families have family size of 7 persons and above. While only 9% population belong to families with less than 3 persons. More or less similar pattern is observed in both the blocks.

3.6 Educational qualification of Beneficiaries

The educational qualifications of the main beneficiary women farmers among the surveyed families as given in Figure 3.4 shows that 67% of the total 1679 beneficiaries are illiterate. Only 29% of them have studied in school, while only 0.4% beneficiaries have been able to access the higher education, i.e. graduation and above. This is a big challenge for the programme as majority of them are not able to read or write. These findings aptly justify the choice of suitable capacity building programmes as major thrust area of MKSP project. Given the education levels of the beneficiaries, even the tools and techniques for conducting these programme focussed on use of audio-visual and pictorial representation of the institutional processes, mainly for demonstrating and introducing the package of practices and field operations necessary for sustainable agriculture.

Figure 3.4: Educational qualification of project beneficiaries



The analysis of the family size and education of main beneficiary is shown in the table 3.5 below. Considering the total illiterate beneficiaries are 67.3%, further analysis shows that 61% illiterate beneficiaries among them are having family size of more than 4 persons.

Table 3.5: Family size wise educational qualification

Education	Family size							
	1 to 3		4 to 6		7 and Above		Total	
	No.	%	No.	%	No.	%	No.	%
Illiterate	98	5.8	767	45.7	265	15.8	1130	67.3
Neo Literate	3	0.2	31	1.8	11	0.7	45	2.7
Primary	20	1.2	163	9.7	58	3.5	241	14.4
Secondary	23	1.4	135	8	32	1.9	190	11.3
Higher Sec.	4	0.2	46	2.7	17	1	67	3.9
Graduate +			4	0.2	2	0.1	6	0.3
Total	148	8.8	1146	68.3	385	22.9	1679	100

3.7 Occupational Profile of Beneficiaries

Secondary literature about the area clearly brings out the poorly developed markets and lack of market orientation which has resulted in lots of exploitation of the local population. The area has an average annual rainfall of 850-900 mm of the project district. However, due to several factors including high variability of monsoon, low moisture holding capacity of soils, absence of developed aquifers due to the hard rock substrate and high run-off due to the undulating terrain, agriculture is fraught with high risks. The average landholdings are 1.04 hectare with very little irrigation facilities, thus a majority of the landed population can be categorized as small or marginal farmers. A typical farmer would have his land distributed in small parcels across the catchments, thus each piece of land would have its different challenges and assurances. In agriculture, Maize, paddy, Cotton and Pigeon pea are the largely grown crops. Productivity of all the crops is in the range of two-third to half the national average.

Survey Findings

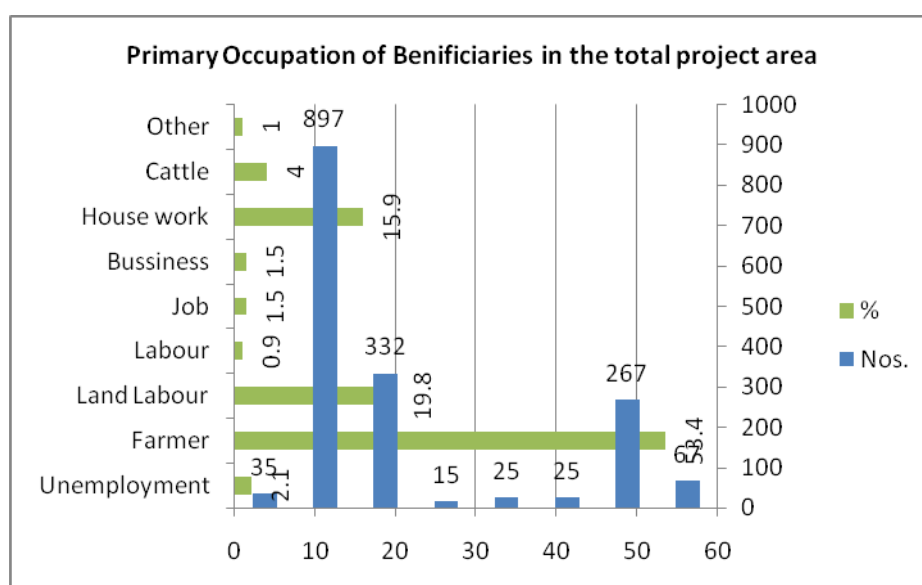
Primary Occupation

The base line study attempts to capture primary and secondary occupations of the main beneficiaries. Analysis of responses for this section of the study as shown in the Figure 3.5 below point out the fact that farming (agriculture) is predominantly the main occupation and cattle rearing (animal husbandry) comes out as secondary occupation for the beneficiaries. Other than these two, there are not many other opportunities for the respondents in the area. About 53.4% of the respondents have reported farming (farmer) as their main primary occupation. The second highest primary occupation carried out is labour work which is

conducted by about 20% of the main beneficiaries. This indicates that only about 50% families are earning enough income to survive and 20% families are having their labour income as a main source of income. Apart from these two primary occupations, 16% respondent reported household work as their main primary occupation. It is possible that while responding to the question they have not considered their labour contribution in the farming and cattle rearing in the family.

The pattern of primary occupation is largely similar in both Chhotaudepur and Jetpur Pavi talukas except the fact that percentage of farming as main occupation is slightly on the higher side among the families belonging to Jetpur Pavi than Chhotaudepur. Compared to this, when it comes to cattle rearing as their main occupation the trend gets reversed. Here, the percentage of main beneficiaries reporting cattle rearing as their main occupation are on slightly higher side for Chhotaudepur block compared to percentage of such families in Jetpur Pavi block.

Figure 3.5 Primary occupations of beneficiaries



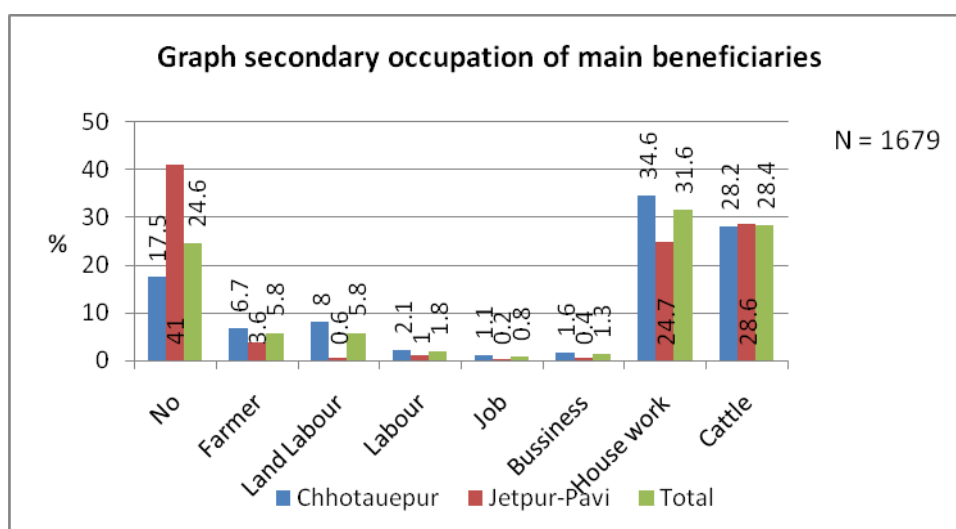
Secondary occupation

The analysis of baseline data on secondary occupations of the main beneficiaries is shown through a bar graph in the Figure 3.6 below. It shows percentage of the total respondents conducting secondary occupations from a range of potential secondary occupations. The analysis indicates that 24.6% respondent do not carry out any secondary livelihood; which mean they are relatively well off. Apart from this 31.6% respondents have reported house work as secondary occupation which indicates that the beneficiaries from large families consume most of their time in household work which prevents them from engaging in any

other income generation activities. Cattle rearing are a major productive and income generating secondary activity carried out by 28.4% of respondents. This also indicates that cattle rearing are women oriented activity among the tribal families. Thus, MKSP project interventions are an opportunity to involve and build capacities of women beneficiaries in cattle rearing to help make it more productive and remunerative for them.

As shown in the Figure 3.6, the respondents from Jetpur Pavi block reporting no secondary occupation and house work are 41% and 24.7% respectively which indicates that these households are having more opportunities and income from primary occupation which is mainly related to farming. In contrast to this in Chhotaudepur block only 17.5 % respondents do not have secondary occupation, while 34.6% respondents are involved in housework which indicates that women from Chhotaudepur block are having more drudgery as compare to those from Jetpur Pavi.

Figure 3.6 Secondary occupations of beneficiaries



3.8 Migration pattern of the project area

Migration is a major problem of both the blocks in the project area. As most of the population has very small landholdings and not many financially attractive alternatives are locally available as secondary occupations, there is a long history of large scale seasonal migration (mostly labour intensive) to other parts of Gujarat. Additional financial income from these migratory occupations, although seasonal, is a major motivation and hence people migrate during Rabi and summer season to different parts of the state like Surat, Ahmedabad, Vadodara, Bhuj, Ankelshwar and Suarashtra as daily wagers, agricultural labourers and construction workers. As soon as Kharif season ends, most people tend to migrate to

different places in search of employment. People with little irrigation sources and livestock stay back in the village but during drought season most of the villagers choose to migrate.

As mentioned above, the tribal region of Chhotaudepur is also known for its migration. Several studies were taken up by various reputed institutions for analyzing the reasons for migration. Findings of these studies suggest that they regularly migrate to same places and work as agriculture labour and wage labour. Children and women are most affected as parents migrate, children are taken along with them and their education is affected adversely. While in case of women their health was found to be badly affected due to drudgeries of work and lack of health facilities around their work area. Distress migration is an obligation of marginal farmers in the tribal communities. They migrate either as individuals or as a family depending upon the quantum of work available at other places.

Survey Findings

Findings from Baseline Study suggest that among the beneficiaries, total 385 families have reported migration from their villages for earning their livelihood. A total of 789 persons from these families were found to be migrating. Maximum numbers of persons (501) migrate during summer period which shows that farming as an occupation is not adequate enough for fulfilling livelihood needs of these families.

Total 385 families covered under the survey in Chhotaudepur and Jetpur Pavi blocks reported migration from their families. This includes 297 (25% of total families) from Chhotaudepur and 88 families (17.4% of total families) from Jetpur Pavi. Migration during Rabi and summer period is more prominent in both the blocks. Probably, it can also be linked to lack of access to adequate irrigation for these two seasons among these families.

Table 3.6: Family size wise migration patterns among surveyed families

Block	Family size	Nos. of families	%	No. of persons Migration		Kharif	Rabi	Summer	Average months
					%				
Chhotaudepur	1 to 3	18	16.8	31	10.7	11	22	27	4.5
	4 to 6	165	20.8	290	7.4	97	198	217	4.3
	7 and Above	114	41.8	269	12.3	68	133	176	4.4
	Total	297	25.3	590	9.3	176	353	420	
Jetpur Pavi	1 to 3	9	22	17	11.3	7	15	9	3.9
	4 to 6	62	17.5	142	8.2	56	94	55	4
	7 and Above	17	15.2	40	5.3	12	24	17	6.1
	Total	88	17.4	199	7.5	75	133	81	

Further analysis of migration patterns with respect to family size is given in Table 3.6 above. It helps in understanding family size wise migration pattern to understand the dependency on migration due to family size. The migration among families having size of 4 to 6 person is highest in both the talukas. However, in Chhotaudepur taluka nearly 40% families opting for migration belong to beneficiaries with family size of 7 persons and above.

Table 3.7: Seasonality of migration period

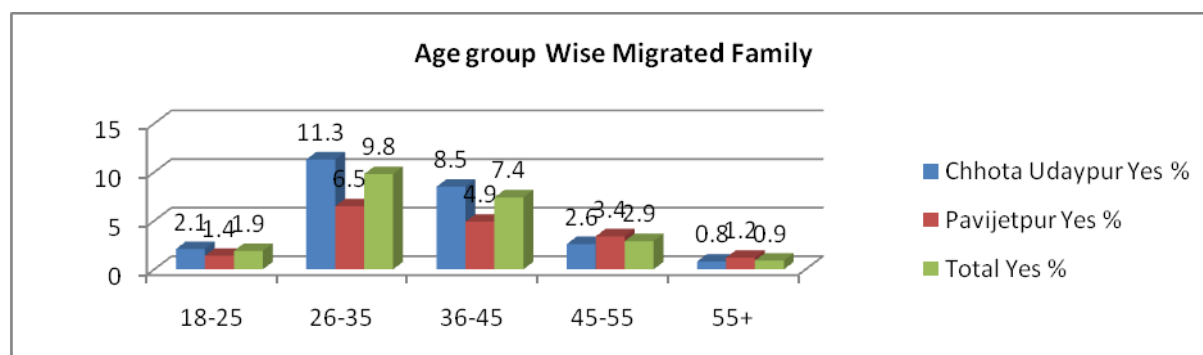
No. of person migrating										
	Kharif		Rabi		Kharif+Rabi		Summer		Rabi + Summer	
	Total Family	Total Member Migrated	Total Family	Total Member Migrated	Total Family	Total Member Migrated	Total Family	Total Member Migrated	Total Family	Total Member Migrated
Chhota udepur	297	176	297	353	297	529	297	420	297	773
Jetpur Pavi	88	75	88	133	88	208	88	81	88	214
Total	385	251	385	486	385	737	385	501	385	987

The seasonality of migration period is shown in table 3.7 above. This analysis shows that migration is required more during Rabi and summer season. Total 987 persons from 385 families migrate during Rabi and summer period, while during Kharif and Rabi season 737 persons migrate. The migration is least during Kharif season which is only 1/4th of migration during Rabi and summer season.

Profile of migrating persons

As shown in Figure 3.7 below, maximum population opting for migration is from the age group between 26 to 35 years of age. This indicates that women belonging to such households ought to bear more responsibilities in relation to overall management of their households.

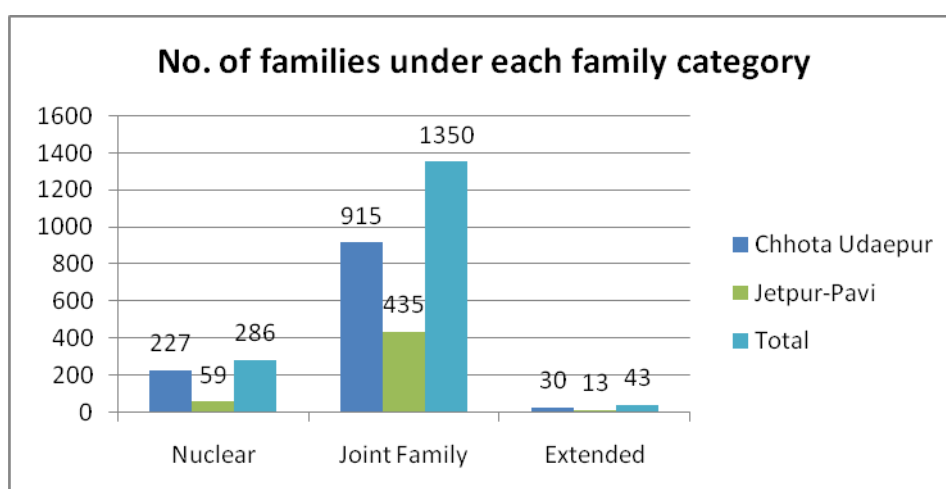
Figure 3.7: Age group profile of migrating persons



3.9 Family types

Just as Figure 3.8 suggests, the surveyed families are broadly divided in to three categories viz. nuclear, joint and extended types. Most of the families (1350 out of 1679) are found to be joint families followed by nuclear families. Very small families are under extended family category. This is a very important aspect of the social fabric in the area as it has bearing on the women beneficiaries with respect to their role as farmers. As mentioned in earlier section on migration their role in larger families demands their greater involvement in household management rather than engaging with income generation activities as occupation.

Figure 3.8: Family types among surveyed families



At block level the percentage of joint families are more in Jetpur Pavi than in Chhotaudepur block. The higher numbers of joint families imply that women's land ownership and participation in decision making is less as compared to nuclear families.

3.10 Social stratification of the beneficiary population

The major families covered under the project belong to schedule tribe category which can be made out from the Table 3.8 given below. Overall 97.3% families belong to ST category. The ST families covered are 96.6% and 98.8% in Chhotaudepur and Jetpur Pavi block respectively. This is in line with the project beneficiary criteria of MKSP project.

Table 3.8: Family wise caste among beneficiaries

Caste	Chhotaudepur		Jetpur Pavi		Total	
	No. family	%	No. family	%	No. family	%
General	4	0.3	2	0.4	6	0.4
SC	36	3.1	4	0.8	40	2.4
ST	1132	96.6	501	98.8	1633	97.3
OBC	0	0	0	0	0	0

3.11 Housing profile of the Beneficiaries

There are three types of houses owned by the surveyed families. These houses are categorised as pucca, semi-pucca and Kuchha house type. A detailed classification is given in Table 3.9 below.

Table 3.9: Housing types among surveyed families

House type	Chhotaudepur		Jetpur Pavi		Total	
	No.s	%	No.s	%	No.s	%
Pucca	213	18.2	213	42	426	25.4
Semi Pucca	482	41.1	195	38.5	677	40.3
Kuchha	477	40.7	99	19.5	576	34.3
Total	1172	100	507	100	1679	100

Out of total 1679 families, only 25% (426 families) own pucca houses, while 34% families own kuchha houses. This indicates that nearly 1/3rd of the families do not have access to safe housing. In Chhotaudepur block 18% of families live in Pucca houses, whereas 40.7% families are still living in Kuchha houses. This shows that families from Jetpur Pavi are having relatively better housing facility than those from Chhotaudepur.

According to family types, in Chhotaudepur block 55.5% of the nuclear families live in Kuchha houses while nuclear families living in Kuchha houses in JetpurPavi block are only 25%. Among Joint families in Chhotaudepur 36.7% are living in Kuchha houses and in Jetpur Pavi block such population is only 18.6%. The distribution of pucca houses among family types shows that joint families in Jetpur Pavi block are having highest Nos. of pucca houses. This is well captured in the Table 3.10 below.

Table 3.10: House ownership according to family type

Housing	Nuclear				Joint Family				Extended			
	Chhotaudepur		Jetpur Pavi		Chhotaudepur		Jetpur Pavi		Chhotaudepur		Jetpur Pavi	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Pucca	49	21.6	24	40.7	151	16.5	181	41.6	13	43.3	8	61.5
Semi Pucca	52	22.9	20	33.9	428	46.8	173	39.8	2	6.7	2	15.4
Kuchha	126	55.5	15	25.4	336	36.7	81	18.6	15	50	3	23.1
Total	227	100	59	100	915	100	435	100	30	100	13	100

3.12 Socio-economic status of Beneficiaries

3.12.1 Socio–Economic profile

Secondary data for Chhotaudepur suggests that there are 33070 (41.63%) families which fulfil criteria for socio-economic backwardness (BPL). Out of these, families belonging to schedule tribes are 80.86 %, schedule caste 3.25% and the rest belong to OBC and others. This taluka ranks second in the district on the scale of socioeconomic backwardness. It doesn't have large numbers of landless families but it has large number of families with less than one hectare land. The economic status of the families is very poor since the family earning is lesser than the average of minimum wages.

Secondary data for Jetpur Pavi taluka shows that there are 41621 (28.97%) families which fulfil criteria for socio-economic backwardness (BPL), out of these, families belonging to schedule tribes are 67.02 %, schedule caste 2.4% and the rest belong to OBC and others. This taluka ranks second in the district on the scale of socioeconomic backwardness. There are not huge numbers of landless families, but huge numbers of families have less than one acre of land. The economic status of the families is very poor since the family earning is less than average of minimum wages. Table 3.11 shows indicators of backwardness in both these talukas.

Table 3.11: Status of Indicators for backwardness

Sr. No.	Particular	Names of blocks	
		Chhotaudepur	Jetpur Pavi
1	Total BPL Families	33070	41621
2	Total landless families	5988	11426
3	Small Farmers	6371	10742
4	Marginal Farmers	7631	12609

Table 3.11 above shows that the project talukas are backward in various parameters. Most families fall under BPL category with high numbers of landless families in project talukas. More than 20240 families are having less than one hectare land (marginal Farmers) in the two blocks covered in the MKSP project.

Survey findings

Of the 1679 project beneficiary families covered under the baseline survey 968 families (57.7%) belong to APL category and 711 families belong to BPL category. The percentage

of BPL families is higher in Chhotaudepur than those covered in Jetpur Pavi block. Table 3.12 provides with socio-economic backwardness profile of the beneficiary families.

Table 3.12: Economic status of the families covered under the survey

Family category	Chhotaudepur		Jetpurpavi		Total	
	No. of families	%	No. of families	%	No. of families	%
APL	646	55.1	322	63.5	968	57.7
BPL	526	44.9	185	36.5	711	42.3
Total	1172	100	507	100	1679	100

Following table 3.13 shows migration need among APL and BPL categories of beneficiary families. The analysis shows that migration is not restricted to any economic category as per government norms. Family members from both APL and BPL families do migrate for labour work. However, it is found that migration is higher among APL families. Analysis of migration season shows that number of persons migrating during summer is higher among APL families. However, the average length of migration period is higher among BPL families. It is found in the area that migration is mostly for agriculture labour to other parts of Gujarat. In this case the migrant labourers are engaged in share-cropping in those areas and earn money as well as gain knowledge.

Table 3.13: Migration among APL and BPL families

Category	Total Family	No of Family Migrated	No. of person migrating during			Round the year
			Kharif	Rabi	Summer	
APL	968	213	145	280	309	4
BPL	711	169	106	206	192	4.8

Table 3.14 below, narrates the performance of various socio-economic indicators and the degrees of involvement of women farmers in important decision-making. The particulars in the table have been broadly distributed into social and economic empowerment indicators.

Table 3.14 Performance of socio-economic indicators and involvement of women farmers

Indicator wise involvement		All family					
		Chhotaudepur		Jetpur Pavi		Total	
		Count	%	Count	%	Count	%
Having bank A/c	Yes	607	51.8	161	31.8	768	45.7
	No	565	48.2	346	68.2	911	54.3
	Total	1172	100	507	100	1679	100
Land in own name	Yes	206	17.6	45	8.9	251	14.9
	No	966	82.4	462	91.1	1428	85.1
	Total	1172	100	507	100	1679	100
Say in decision making	Always	310	26.5	157	31	467	27.8
	Sometimes	748	63.8	325	64.1	1073	63.9
	Never	114	9.7	25	4.9	139	8.3
	Total	1172	100	507	100	1679	100
	Sometimes	634	54.1	300	59.2	934	55.6
	Never	166	14.2	52	10.3	218	13
	Total	1172	100	507	100	1679	100
Go to market	Always	174	14.8	62	12.2	236	14.1
	Sometimes	724	61.8	260	51.3	984	58.6
	Never	274	23.4	185	36.5	459	27.3
	Total	1172	100	507	100	1679	100

We see that only 45.7% of the total respondents have bank accounts. Though Jetpur Pavi is considered more developed than Chhotaudepur; in case of bank account in the name of women it is lagging behind. There are only 31% women respondents having bank accounts in Jetpur Pavi as against 51% women respondents in Chhotaudepur. Majority of them have become bank account holders after Government of India's mission mode programme for opening of bank account in last two years. The survey also indicates that single women family has about 63% bank account holders, which is a good sign of economic independence.

Overall 27% respondents have reported that they always have a say in decision making, i.e only women from every third house covered under the survey is having scope of participating in decision making. However, 63% women respondents were consulted in decision making at household level. The situation is same in both the blocks. In case of single women household 57% women respondent say that they have a say in decision-making, while 37% reported that they are consulted sometimes.

When it comes to land holding, women are far behind than their counter part. Overall only 14.9% have their names in land holdings. Here also women from Jetpur Pavi blocks are

deprived from this right as compared to Chhotaudepur. The 31% single women have land ownership which is much greater than the women in normal household. Thus the majority of the family assets are not under the direct ownership of the beneficiaries. This also directly hampers their involvement in decision making for such assets.

The exposure to market place decides the mobility of the women in the family. The survey analysis shows that only 14% women always visit market place (local Haat or town market), while 58% women respondent go to market sometimes. The observation indicates that those who have reported regular market visits are those women who are involved in selling vegetables or other commodities in these markets. Otherwise women members go to market with their family members to do purchasing during weekly markets. As expected single women have to bear responsibility of market also. About 30% of single women go to market on regular basis while 59% go to market sometime.

Chapter IV: Information and Awareness

This section discusses the findings from Baseline Survey with respect to the knowledge and awareness levels of the respondents in relation to the major project interventions.

Table 4.1 below captures the scenario with respect to knowledge and adoption of this knowledge in actual practise. Numbers and percentage of the total respondents having knowledge of sustainable agricultural practices is one category of beneficiaries and the other set of numbers and percentages of the respondents indicate the beneficiaries who are actually using such agricultural practices. The status of each project component is scrutinized based on the data analysis and they are discussed in details below.

4.1 Soil testing

Overall 44% of the total surveyed families have knowledge about soil testing process and how to get it done through local resources. However, only 23.7% of the total families use it to their advantage. A lot of work needs to be done to ensure that the project beneficiaries actually get the soil testing done. The analysis clearly indicates that although they know its importance they are not able to get soil testing done due to non-availability of testing laboratory or there must be problem in understanding the recommendations or possibly recommendations may not be found feasible by them.

4.2 Seed treatment

The seed treatment is the second important factor for sustainable agriculture. The analysis results indicate that only 19% (312 of 1679) of the total respondents know about seed treatment, but only 14,6% of total respondents (240 of 1679) are practising it. This also signals the need for large scale awareness creation about seed treatment among the women farmers.

4.3 Vermicomposting

The data analysis presented in Table 4.1 below presents the scenario with respect to knowledge about Vermicomposting and its actual use. It shows that 31% respondents have knowledge about Vermicomposting but only 11.6 % of total beneficiaries are practicing it. The observations from the field indicate that most of the farmers use available cow dung directly in the field and now they are slowly turning to use of Vermicomposting practices.

Table 4.1 Knowledge and use of sustainable agricultural practices

Component	Knowledge (N=1679)		Practicing (N=1679)	
	Nos.	%	Nos.	%
Land preparation & cropping				
Soil testing	737	43.9	398	23.7
Seed treatment	312	18.6	240	14.3
Inter cropping	800	47.6	720	42.9
Crop rotation	977	58.2	863	51.4
Plant spacing	1331	79.3	834	49.7
Integrated Nutrition Management (INM)				
Vermi compost	528	31.4	195	11.6
Use of natural pesticides	169	10.1	121	7.2
Kitchen garden	163	9.7	89	5.3

4.4 Inter-cropping and crop rotation

Inter-cropping and crop rotation are two practices for soil management. Both these practices are well known and practiced by nearly 50% of the respondents. Since, the tribal farmers have been practising multi-cropping since long the chances for acceptance of intercropping as agricultural practice is high. However they need to be made aware about the varieties and rotation of the crops for better soil management.

4.5 Plant spacing

Knowledge about plant spacing helps in proper growth of the agriculture crop. It is found that 79% women farmer have knowledge about plant spacing criteria but only about 50% of them actually practice it. The small land holdings and their conception of higher spacing has led to reduced production which is an outcome of the fact that despite having knowledge of the above mentioned practices they do not use it in actual practices.

4.6 Use of Natural pesticides

The data analysis suggests that use of natural pesticides for controlling pest attack is known to only about 10% of the total respondents; however the better part of the story is that majority of beneficiaries who know it actually use it. The availability of ready to use pesticides in the market and its quick results in a way lead to a situation where they don't find the concept of natural pesticides attractive enough to neither access knowledge nor adopt them in actual practice.

4.7 Kitchen garden

Kitchen gardens are important from two perspectives: nutrition as well as income generation on regular basis. Although, the data analysis suggests that less than 10% farmers have knowledge about it, it is worth mentioning here that growing few plants of seasonal vegetables is practiced in almost all tribal families. Since it is not a systematic plantation like in the agriculture field, many of the respondents might not have considered mentioning their knowledge of growing vegetables in backyard as kitchen garden.

4.8 Animal husbandry

Livestock could emerge as an important source of income and employment for the rural poor in this area. They act as a buffer against income shocks due to crop failures which is a frequent phenomenon. Livestock provides a continuous set of outputs and thus income from livestock helps them in addressing their consumption needs. Species like poultry, goat, sheep and pigs are of short-generation interval, have a high prolificacy rate and require less land, investment and operational expenses and are better suited to the resource endowment of the poor.

Cows and buffalos are an important source of manure and draught power, which are vital to improving crop production and environment. Gujarat is rich in livestock wealth. Livestock sector contributes about 23 percent to the total value of agricultural sector output. A majority of the rural households possesses one or another species of livestock. The distribution of livestock holdings is more equitable as compared to land, indicating that the poor have more opportunities in livestock production than in crop production. Production from livestock however is low in the area. Milk yield of cow as well as of buffalo is about half of the average. Low yield is due to a lack of awareness and adoption of technology, feed scarcity and inadequate animal health services.

Survey Findings

Animal rearing is a common practice in the tribal blocks. Among the surveyed families 73% (1233 families) reported that they do practise animal husbandry in their family. It is practised much more in villages of Jetpur Pavi as compared to that of Chhotaudepur taluka. Table 4.2 below provides details of total cows and buffaloes including calves. There are total 4261 cows and buffalos including 1816 calves. The animals have two breeds viz. Indigenous (83%) and crossbreeds (17%). About 57% of the available animals are milk yielding animals in both the talukas. The average number of animal/family is 3.27 in Chhotaudepur and 3.81 in Jetpur Pavi.

Table 4.2: Animal husbandry profile of Beneficiaries

Details	Chhotaudepur	Jetpur Pavi	Total
Total animals (adult plus calf)	2634	1627	4261
Indigenous	2171	1373	3544
Crossbreed	463	254	717
No. of calf (Cow & Buffalo)	1121	695	1816
No. of milch animals	1513	932	2445
Average animal holding/family	3.27	3.81	3.54
% of milk yielding animal to total	57.44	57.28	57.38

Analysis presented in Table 4.2-A indicates that out of the total families practising animal husbandry, most of them have family size of 4 to 6 persons.

Table 4.2-A: Distribution of animals as per Family size

Taluka	Family size						Total	
	1 to 3		4 to 6		7 and Above		N	%
	N	%	N	%	N	%		
Chhotaudepur	66	5.6	557	47.5	183	15.6	806	68.8
Jetpur Pavi	32	6.3	298	58.8	97	19.1	427	84.2
Total	98	5.8	855	50.9	280	16.7	1233	73.4

Total 1233 families own 4261 animals of which 2445 are milching animals as shown in Table 4.3 below. The total milk production is 7842 litres. The families who own animals belong to both the talukas. More than 50% of the animals are in the houses having 4 to 6 persons in the family. Probably, this family size helps spare one person for animal care. The average number of animals per household is higher in Jetpur Pavi block which is mainly due to easy access to irrigation water and fodder.

Table 4.3: No. of milch animals according to family size and milk production

Name of Taluka	No. of animals in families size of				Milch animal Nos.	Milk production in litre
	1 to 3	4 to 6	7 and Above	Total		
	N	N	N			
Chhotaudepur	176	1726	732	2634	1513	4177
Jetpur Pavi	112	1134	381	1627	932	3665
Total	288	2860	1113	4261	2445	7842

Out of the total animal holding families, 300 families are also members of diary co-operatives in their respective villages.

4.8.1 Knowledge of animal rearing practices

The analysis of data for extent of knowledge and adoption of best practices for animal rearing is shown in Table 4.4 below. The majority of best practices except mineral mixture feed are known to more than 50% of the surveyed families. But a very small percentage of beneficiaries are actually using them.

Table 4.4: Knowledge and adoption of best practices for animal husbandry

Animal husbandry practices	Knowledge		Use					
	Nos.	%	Always	%	Sometime	%	Never	%
Artificial insemination	1240	73.9	758	45.1	347	20.7	135	8.0
Vaccination	1211	72.1	692	41.2	410	24.4	109	6.5
Devorming	1025	61	271	16.1	479	28.5	275	16.4
Chaff Cutter	836	49.8	78	4.6	295	17.6	463	27.6
Mineral Mixture	348	20.7	151	9.0	164	9.8	33	2.0
Feed	854	50.9	584	34.8	257	15.3	13	0.8
Fodder	1065	63.4	834	49.7	226	13.5	5	0.3

The data suggests that there is a good scope for promotion of best practices of animal rearing among the project beneficiaries to help them take maximum benefits from animal rearing.

4.9 Capacity building

Analysis presented in Table 4.5 suggests that overall only 20% of the respondents have taken any kind of training. Thus there is an urgent need for capacity building of the project beneficiaries. The following table lists down the number of respondents having undertaken training under the different components.

Table 4.5: Capacity building/ training/ exposure of project beneficiaries

Training subject	Chhotaudepur		Jetpur Pavi		Total	
	Nos.	%	Nos.	%	Nos.	%
Any type of training	245	20.9	101	19.9	346	20.6
Agri-Horti	112	9.6	35	6.9	147	8.8
Livestock	143	12.2	24	4.7	167	9.9
Health	73	6.2	6	1.2	79	4.7
SHG	245	24.5	40	7.9	285	17.0
Employment	4	0.3	3	0.6	7	0.4

Table 4.5 given above shows that when it comes to specific types of trainings undertaken by the beneficiaries, maximum number of respondents have taken trainings related to SHGs (17%), followed by livestock (9.9%) and agriculture-horticulture (8.8%) respectively. The exposure to the health and employment related training is minimal.

4.10 Institutional Affiliation

This section intends to understand the participation of the beneficiaries in the village level organisation. The analysis was done to understand the status of the participation of the project beneficiaries in eight types of main village organisations (VO). All the project beneficiaries are drawn from the *Sakhi Mandals*/ women SHGs formed under NRLM and hence all beneficiaries are by default members of one or other SHGs. It is envisaged to build capacities of these women members in order to strengthen these SHGs so that they can play pivotal role in providing livelihood based support needed by their families. In present conditions, apart from SHGs the second highest participation of women is found in dairy membership, which is about 16%. The women participation in dairy co-operatives is about 6% in Jetpur Pavi block which is much lower than dairy co-operative membership in Chhotaudepur block. The beneficiary women membership is around 10% in village level committees for education, drinking water, irrigation co-operative and forest committee. The membership of women in federation and village health committee is 1.7 % and 3.3% respectively. This could be one of the indicators for the lack of empowerment among beneficiaries and also the major causes for the lack of economic development and poor health status of women and child in general. The details of VO wise women membership in both talukas is shown in Table 4.6 below.

Table 4.6: Membership of beneficiary women in village level organisations (VOs)

Sr.No	Village Organisation (VO)	Chhotaudepur		Jetpur Pavi		Total	
		Nos	%	Nos	%	Nos	%
1	SHG	1172	100	507	100	1679	100
2	Milk Co-operative	238	20.3	30	5.9	268	16
3	Arogya Samiti	50	4.3	5	1	55	3.3
4	Forest Committee	133	11.3	44	8.7	177	10.5
5	Pani samiti	150	12.8	45	8.9	195	11.6
6	Piyat Mandali	148	12.6	50	9.9	198	11.8
7	Shikshan Samiti	163	13.9	66	13	229	13.6
8	Federation	15	1.3	14	2.8	29	1.7
9	Other	128	10.9	50	9.9	178	10.6

The role of these women beneficiaries in decision-making processes of these VOs is understood through their position in the organisation. As shown in Table 4.7 below, out of

the 1679 beneficiaries, 178 of them are either in positions of leadership or occupy some responsible position for decision-making in VOs. Thus, although women are part of VOs, the decision-making role is dominated by male members. The MKSP project is expected to build managerial and decision-making capacities of women beneficiaries so that they can also play effective role in village development.

Table 4.7: Women beneficiaries in decision-making of Village Level Organizations (VOs)

Position Held	President	Secretary/Vice president	Total decision making position
Nos.	59	119	178
Percentage of total membership (2287)	2.58	5.20	7.78

4.11 Access to government services

Table 4.8 below presents an overview of the number of respondents who are aware of the different benefits under various government schemes (multi-response). It further lists down the number of beneficiaries who have taken benefits and those who demanded the scheme benefits against each activity. Total 27 types of government schemes related awareness, benefit taken and further demands were assessed through this Baseline Survey. These 27 schemes are broadly clubbed into seven thematic categories with actual number of schemes included in each category is shown in this table.

Table 4.8: Access to government schemes

Sr. No.	Govt. Scheme detail	No. Of schemes covered	No. of respondent reported having		
			Awareness	Benefit taken	Demand
1	Crop productivity improvement	3	1191	262	3897
2	Water resource development	5	1192	86	5465
3	Land Development	4	374	51	3149
4	Soil Moisture conservation	5	1278	303	5461
5	Animal rearing related	6	1293	252	6462
6	Income generation	2	225	48	1832
7	Housing facility	2	1742	384	2625

4.11.1 Awareness

The respondents have maximum awareness about housing facility schemes which includes creation of government supported housing and sanitation facility at household level. The next most known schemes are related to animal rearing, soil moisture conservation, water resource development and crop productivity. The respondents found to be least aware about income generation and land development schemes.

4.11.2 Benefits taken

As the respondents are having maximum awareness about housing facilities, many of them have also reported about taking benefit of such schemes. Total 384 respondents have taken benefit of these schemes. Overall, the data shows that approximately 20% of the respondents, who are aware about the various government schemes, have taken the benefit of such schemes. Among the schemes directly linked to agriculture, the least benefit is realised in water resource development and highest benefit is realised in soil moisture conservation works. The overall scenario with respect to benefits taken for these scheme ranges from 5% to 14% of respective category with overall average of 5%.

4.11.3 Demand assessment

Table 4.9 below presents an overview of the number of respondents who demand different benefits under various government schemes (multi-response).

The animal rearing related schemes have the highest demand among all categories. The respondents have demand for 6462 scheme benefits related to animal rearing related schemes. The water resource development and soil moisture conservation related schemes are also having demand for more than 5000 activities. Although there is less awareness about activities related to land development and income generation categories; these categories of schemes have very high demand which is more than eight times its awareness. The individual scheme wise awareness, benefit realised and further demand is shown in Table 4.9 below.

Table 4.9: Government scheme-wise awareness, benefits realised and demands

Sr.no	Govt. Scheme detail	No. Of person reported having		
		Awareness	Benefit taken	Demand
	Crop productivity improvement			
1	Vermi compost	695	88	1277
2	Ndap fertiliser	355	135	1154
3	Liquid fertiliser	141	39	1466
	Total	1191	262	3897

Water resource development				
4	Farm pond	997	35	1624
5	Renovation of farm pond	55	11	923
6	Percolation tank	29	29	993
7	Dug well recharge	95	8	1030
8	Gabion structure	16	3	895
	Total	1192	86	5465
Land development				
9	Improvement of waste land	95	17	991
10	Bench terracing	19	7	158
11	Orchard raising	213	19	1026
12	Agro-forestry	47	8	974
	Total	374	51	3149
Soil moisture conservation				
13	Soil bund	257	58	1075
14	Stone wall	252	44	1097
15	Contour trenches	65	17	992
16	Land levelling	398	91	1208
17	Farm-bunding	306	93	1089
	Total	1278	303	5461
Animal rearing related				
18	Cattle shed	634	105	1293
19	Poultry farm	147	23	853
20	Goat farm	161	26	854
21	Cattle farm	237	74	1645
22	Azolla cattle feed	59	9	926
23	Pasture land	55	15	891
	Total	1293	252	6462
Income generation				
24	Nursery raising	206	29	968
25	Sericulture	19	19	864
	Total	225	48	1832
Housing facility				
26	IAY housing	899	256	1181
27	Household latrines	843	128	1444
	Total	1742	384	2625

4.12 Nutritional demands of beneficiary families

The food items required for complete diet in terms of individual nutritional requirements have been considered for the survey which includes grains, pulses, vegetables, oil and milk. Table 4.10 below describes the food item (food grain and pulses) consumption pattern in surveyed

families belonging to Chhotaudepur and Jetpur Pavi blocks. Table 4.10 below shows consumption pattern for the surveyed families in Chhotaudepur and Jetpur Pavi.

Table 4.10: Nutritional requirements and Consumption of Food Items

Food item		% respondent		
		Chhotaudepur	Jetpur Pavi	Total
Main grain	Maize	99.00%	96.10%	98.10%
	Wheat	0.90%	2.20%	1.30%
	Paddy	0.20%	1.80%	0.70%
Main pulses	Tur	84.50%	97.60%	88.40%
	Black Gram	15.40%	2.20%	11.40%
	Green Gram	0.10%	0.20%	0.10%

Table 4.10 above shows that overall 98% of the families consume maize as the main food grain in the families. Rest 2% families use Wheat and Paddy as main food grain. In case of pluses, majority of families consume Tur as main pulse, however families using Black Gram as main pulses are around 15% as compared to 2.20% in Jetpur Pavi. A very small fraction (0.10%) of families also uses Green Gram as main pulse in their food. This consumption pattern indicates a fair combination of source of protein and carbohydrate in the food habits.

Sourcing

Since majority of families covered in the survey are also having land, they are able to grow their staple grains and also vegetable. Those commodities of food grain and edible oil is procured from public distribution systems at a lower cost and remaining or shortfall is purchased from local shops or market in Chhotaudepur or Jetpur Pavi.

The analysis of this data is shown in Table 4.11 below that gives average of family level annual requirement and sources of required food items. The data indicates that 100% food grain needs along with about 50% of pulses and 80% of the vegetables of average annual needs are sourced from own resources. In case of milk needs about 68-69% is available at household level and they have to purchase it only during lean period of milk production at household level. This indicates high amount of dependency on own sources for daily diet needs. The only food item for which the families depend on PDS system or market is edible oil. Thus it becomes more critical to ensure food security on sustainable basis through improved agriculture production and quality.

Table 4.11: Average annual requirements of food items and their sources

Food item	Unit	Average annual requirement		Chhotaudepur			Jetpur Pavi		
		Chhotaudepur	Jetpur Pavi	Own	PDS	Shop	Own	PDS	Shop
Main grain	Kg	503	503	503	0	0	503	0	0
Other grain	Kg	291	370	291	0	0	370	0	0
Pulses-total	Kg	113	57	54	0	59	31	0	26
Vegetables	Kg	218	217	177		41	174		43
Edible oil	Litre	77	57	2	2	73	3	0	54
Milk	Litre	145	241	97	1	47	164	11	66

Table 4.11 above also indicates the difference in family level consumption pattern between Chhotaudepur and Jetpur Pavi blocks. The families in Jetpur Pavi block consume more amount of food grains and fewer amounts of pulses. The average annual consumption of milk is higher in Jetpur Pavi (240 liters) as against 144 liters in Chhotaudepur. The existence of higher number of milk co-operatives in the villages of Jetpur Pavi block has led to promotion of milk consumption in the tribal families. Similar situation is witnessed in villages of Chhotaudepur taluka having milk co-operatives.

Chapter V: Scoping and Financial analysis of agricultural inputs, Yields and Market Channels

5.1 Inputs and Yields

This section will present the inputs those are currently given during the cultivation of major crops. For the sake of comparison the inputs presented are given for one acre of cultivation in one season. The data is collected for five major crops viz. Maize, Paddy, Black gram, Wheat and Gram. These five crops are important from the point of view of food and livelihood security at family level. Under MKSP project these crops are considered for sustainable agriculture practices through capacity building in form of relevant trainings and demonstration plots. The major cross cutting analysis of the Baseline Survey includes crop wise measurement of quantities of major inputs of fertilizers, pesticides, weedicides as well as machine related services and labour expenditures incurred. Production is given in the local terminology of a *Mann* which equals 20 Kgs of produce. Table 5.1 below summarizes the input-output facts and figures for the five crops mentioned above.

The analysis of responses from 1679 survey respondents across villages of Chhotadepur and Jetpur Pavi is presented below.

5.1.1 Extent of cropping and seasons

The analysis shows that Maize is the most popular crop in the project area. It is cultivated in Kharif as well as Rabi season. Mostly, it is cultivated as a single crop and sometimes as a mixed crop. The survey indicates that if farmers have option of taking only one crop than their preference is for maize. The promotion of improved seeds varieties and package of practices under “Sunshine” programme in tribal blocks has doubled the production of Maize.

The Paddy cultivation in the area has increased with the increase in irrigation facility and levelling of slopping land. Now a day, Paddy has become first choice for the farmers if irrigation facility is available. The analysis shows that Paddy is the second largest crop grown by the project beneficiaries covered under the survey. The Paddy is cultivated by transplantation if water is available or else by broadcasting method.

The area of black gram (Udad) is a crop suitable for degraded or less fertile soil. It is grown in Kharif season mostly for self consumption. However, it is the third largest crop grown in the area. Wheat and Gram (Chana) are two crops exclusively sown during Rabi season.

Though mix cropping is considered as a best cropping practices for drought prone area; the tribal farmers are now leaving mix cropping as practise and preferring mono/sole cropping

practices. In more than 90% area of the five major crops is under mono cropping. Maize and Paddy crop are cultivated in mix crop to an extent of 3% to 7% of the reported area.

5.1.2 Plot size

Almost 90% of all five crops are cultivated on a plot size ranging from less than 1 acre to 2 acres of land. Plots having size of 2 acres and more are usually used for Maize and Paddy cultivation.

Table 5.1: Input quantities, expenditures and production for five major crops

Crop Name==>		Maize	Paddy	Black gram	Wheat	Gram
Crop Season		Kharif & Rabi	Kharif	Kharif	Rabi	Rabi
No. of recorded cultivation among surveyed families		2227	1525	277	87	83
Type of cultivation	Sole	97.80%	93.00%	100.00%	98.90%	100.00%
	Mix	2.20%	7.00%		1.10%	
Cultivation in size in acre	<1	17.20%	19.50%	47.70%	41.40%	45.80%
	1 to <2	73.60%	73.80%	50.20%	56.30%	49.40%
	2 to <3	7.90%	5.60%	1.40%	2.30%	2.40%
	3 to <4	0.80%	0.50%	0.40%		2.40%
	4 to <5	0.20%	0.20%	0.40%		
	5+	0.30%	0.40%			
Average inputs per acre						
Seeds	Qty. Kg	15.53	17.32	5.39	43	20.7
	Cost in Rs.	2160	910.47	370	1507	875
Fertilisers	Qty. Kg	219	312	77	113	84
	Cost in Rs.	2245.86	2730	830.21	1302	723
Pesticides	Qty. Liter	6.14	9.42	0.17	5.99	0.33
	Cost in Rs.	132.12	295	57.65	111.78	115
Weedicides	Qty. Liter	0.34	2.86	0.12	0.11	0.16
	Cost in Rs.	21.58	66	18.41	61	66
Total cost Rs.		4559	4001	1276	2982	1779
Machine use cost/acre	<1000	8.00%	11.00%	47.70%	20.70%	41.50%
	1000-3000	50.30%	64.70%	44.00%	60.90%	50.00%
	3001-5000	28.20%	15.70%	5.80%	8.00%	7.30%
	5001-7000	9.00%	3.70%	0.70%	4.60%	
	7000+	4.40%	4.90%	1.80%	5.70%	1.20%
Labour cost/acre	<1000	1.40%	1.60%	7.60%	3.40%	13.30%
	1000-3000	39.60%	29.40%	74.60%	67.80%	73.50%

	3001-5000	39.70%	44.70%	13.80%	23.00%	13.30%
	5001-7000	11.10%	15.30%	2.50%	4.60%	
	7000+	8.10%	9.00%	1.40%	1.10%	
Production Mann/acre	<10	0.40%	0.70%	72.90%	2.30%	31.30%
	10-20	10.00%	13.20%	27.10%	44.80%	51.80%
	21-30	15.40%	19.40%		18.40%	7.20%
	31-40	19.90%	23.80%		11.50%	3.60%
	41-50	17.60%	17.60%		16.10%	
	51+	36.70%	25.30%		6.90%	6.00%

5.1.3 Input quantity and cost

The analysis of the inputs applied and its cost of these five crops is measured as average inputs for production on one acre land. The major inputs of seeds, fertilizer, pesticides, weedicides is taken in to consideration in the analysis. Table 5.1 provides an in-depth analysis of input quantities, expenditures and production for five major crops mentioned above.

Seed rate

The analysis shows that the tribal farmers use higher seed rate for cultivation of Maize and lower for Wheat and Paddy. The block wise analysis of seed rate shows that seeds used for maize and wheat crop is higher in Jetpur Pavi than in Chhotaudepur.

The costs of seeds vary according to variety of seed used as well the seed brand. The spending on purchase of seeds is the highest for maize (Rs. 2160) and the lowest for black gram (Rs. 370) among all five crops.

Use of Fertilizer

The analysis of use of fertilizer has taken in to consideration all types of fertilizers used for particular crop. This includes chemical as well as organic/bio-fertilizers. The data analysis shows that highest quantity of fertilizer is used for Paddy cultivation (312 Kg./acre) followed by that for maize (219 Kg/acre). The expenditure on fertilizer is the highest in case of paddy followed by maize. The least fertilizer expenditure incurred is in case of Gram cultivation.

Use of Pesticides and Weedicides

The pesticides are used mainly in maize, paddy and wheat crop. The analysis shows that pesticides used for paddy is the highest among all crops, followed by maize and wheat. The use of pesticides in Black Gram and Gram is made only in emergency. The Black Gram and Gram from this area is also considered as pesticides free produce and hence has opportunity to brand it as non-pesticides product from this area. The expenditure on pesticides is the highest for paddy followed by maize and wheat crops.

The use of weedicides follow same pattern as that of pesticides. The major use of weedicides is done in paddy cultivation (2.86 liter/acre). Apart from paddy, weedicides are used in very small quantity in all other crops. The cost related to weedicides use is nominal and in the range of Rs. 20 to 60/acre.

Use of machines

The data analysis shows that the 80% of the farmers cultivating maize and paddy spent Rs.3000 to 7000/acre towards machine costs, while machine cost for nearly 90% farmers cultivating Wheat, Black Gram and Gram is less than Rs.3000/acre.

Use of labour

Approximately 75% to 90% farmers cultivating any of the five crops mentioned above pay Rs.1000 to Rs. 5000 towards labour cost. In case of maize and paddy 10% & 15% farmers pay labour between Rs.5000 to Rs.7000 respectively. The labour cost is below Rs.3000 for nearly 80% farmers growing black gram and gram.

Production

The analysis of production data for all five crops is shown in Table 5.2 below. It shows that the production of all crops except Black Gram and Gram varies over a large range which indicates proper package of practices (PoP) of these crops are not followed by the surveyed families. Maize and Paddy are two most cultivated and produced commodities in the project area. Table 5.2 shows that in case of maize only 53% of the farmers are able to get production of more than 40 Mann/acre which is national average. Similarly 65% farmers growing paddy are getting production of more than 30 Mann/acre which is minimum level of paddy production at national level for paddy. (Reference : http://www.iasri.res.in/agridata/12data/chapter5/db2012tb5_18.pdf)

Table 5.2: Production of five major crops

Crop Name==>		Maize	Paddy	Blackgram	Wheat	Gram
Crop Season		Kharif & Rabi	Kharif	Kharif	Rabi	Rabi
No. of recorded cultivation among surveyed families		2227	1525	277	87	83
Production Mann/acre	<10	0.40%	0.70%	72.90%	2.30%	31.30%
	10-20	10.00%	13.20%	27.10%	44.80%	51.80%
	21-30	15.40%	19.40%		18.40%	7.20%
	31-40	19.90%	23.80%		11.50%	3.60%
	41-50	17.60%	17.60%		16.10%	
	51+	36.70%	25.30%		6.90%	6.00%

The analysis given in the table above clearly indicates the need for emphasis on providing proper package of practices and transfer of technologies for all above crops selected for the project interventions.

5.2 Marketing of agricultural produce

This section of the baseline study captures the farmer's interaction with various market channels for selling their agricultural produce. It also tries to assess the price difference under various market channel options available for the marketing. The section also captures the farmer's preference for the type of market channel, expenditure incurred for selling commodity and price.

The farmers have four options for marketing their produce which includes Agriculture Produce Marketing Committee (APMC), local agent, local buyer and consumer. It is found that choice of market channel for the farmer depends on quantity of produce, distance of selling point from the village, availability of transportation and also their own needs for cash money.

The analysis shows that among all five major crops selected for the project, maize and paddy are the mostly available market commodities from the project villages. The production of Black Gram, Wheat and Gram is limited due to its use for self consumption.

Selling point

The local buyer is the most preferred market channel for the farmers. The local buyers are commodity traders who collect commodity from the farmers at village or cluster level and sell it further to the market players in value chain. However, percentage of farmers selling their

produce to local buyers depends on the agriculture commodity. The data analysis shown in Table 5.3 below indicate that local buyer is the most preferred selling point in case of Gram and wheat (86% and 93% farmers) crop, while in case of other three crops farmers also opt for other market channels. Overall, limited numbers of farmers prefer APMC which is located at taluka place. Those who are having facility of transportation they go to APMC.

APMC is one of the options for the farmers for selling of the crops like maize and paddy, while wheat is sold in the village or at cluster level. The local agents have same amount of market share as APMC in case of maize and paddy, however they have much higher share (20%) in black gram as compared to APMC.

Table 5.3: Selling point and expenditure incurred for selling agricultural commodities

Crop Name==>		Maize	Paddy	Black Gram	Wheat	Gram
No. of recorded market transaction among surveyed families		2063	1310	137	51	49
Selling point	APMC	14.60%	16.60%	5.10%	5.90%	2.00%
	Local Agent	14.40%	16.30%	20.40%	7.80%	2.00%
	Local Seller	70.70%	66.60%	74.50%	86.30%	93.90%
	Customer	0.30%	0.50%			2.00%
Selling expenditure	<500	53.40%	61.20%	96.40%	74.50%	91.80%
	500-1000	33.20%	33.90%	3.60%	23.50%	8.20%
	1001-1500	7.10%	4.00%			
	1501-2000	3.80%	0.50%		2.00%	
	2001-2500	1.30%	0.40%			
	2500+	1.10%	0.10%			

Selling expenditure

Since nearly 70% of any type of produce is sold at the village/cluster level markets, the farmers from both the blocks incur selling expenditure less than Rs.500 to maximum Rs.1500. The expenditure includes packing, local transport from farm to local buyers shop, commission of agent, etc. The selling expenditure is less than Rs.500 in case of Black Gram and Gram, while it ranges between less than Rs.500 to Rs.1500 for farmers selling Maize, Paddy and Wheat.

In case of selling at APMC or any other markets, the farmers end up paying more for transportation and value processing so that it can fetch better price. The maximum selling expenditure of more than Rs, 2500 is recorded in case of maize. This indicates that very small fraction of maize grower farmers (1%-2%) also explore markets other than available local markets.

Price

The price to the farmers depends primarily on selling point as well as quality of the produce. The table 5.4 below shows average price received by farmer for 20 Kg (Mann) of produce.

Table 5.4: Agricultural crop price by the farmer

Market place	Price realisation in Rs./Mann (20 Kg)				
	Maize	Paddy	Black gram	Wheat	Gram
APMC	266	282	643	293	
Local Agent	260	281	639	280	400
Local buyer	255	268	754	337	627
Customer	283	265			

Table 5.4 above shows that the commodity prices realized by the farmer do not show any trend, but across all commodities, the prices are higher in APMC as compare to local agent and local buyer channel except some cases.

In the case of Black Gram and Wheat farmers fetch better price from local buyers than in APMC. The price difference in APMC rates and those offered by local buyers is to the tune of Rs.11 and Rs.14 per mann for maize (Rs.266 - Rs 255) and paddy (Rs.282-Rs.268), which are the most sold commodity. In case of wheat the difference between price offered at APMC and local buyer is Rs.44/mann. The price comparison between two talukas through various market channels is shown in Table 5.5 below.

Table 5.5: Agri-market channels and comparison of price across market

Market	Maize		Paddy		Black Gram		Wheat		Gram	
	CU	PJ	CU	PJ	CU	PJ	CU	PJ	CU	PJ
APMC	266	272	274	333	643	.	290	300	1000	.
Local Agent	256	271	275	312	636	700	257	350	400	.
Local Seller	256	251	267	272	731	1117	337	325	627	.
Customer	275	300	258	300					.	90

Chhotaudepur =CU and Jetpur Pavi (PJ)

Table 5.5 above shows that all market channels offer higher prices for all the commodities in Jetpur Pavi as compared to market channels in Chhotaudepur. This indicates that farmers from Chhotaudepur taluka who are selling majority of commodity through local buyers are exploited as compared to those in the Jetput Pavi block. Thus there is an urgent need for understanding the factors responsible for influencing distress sell of commodity to local buyer in the villages of Chhotaudepur.