

An analysis of
**FOOD
SECURITY**
In the villages

Submitted to:

Gene Campaign
(New Delhi)



Submitted

by:

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EXECUTIVE SUMMARY

One of the eight goals of Millennium Development Goals (MDG) is to eradicate poverty and hunger. This goal seems to be an essential one for achieving other seven goals. Poverty is the one of the main cause of food insecurity across the globe, but there are other issues as well. These include climate change, less diversification of crops, shift from traditional knowledge and poor political and economic governance.

Since past many years, India has been witnessing the phenomenon of erratic monsoons consistently. This uncertain act of nature has serious implications on food sufficiency and food security of the country. Following the poor monsoons during the agricultural season, the country witnesses its impact on the welfare of people in terms of drinking water and employment opportunities and further on the food prices. Large numbers of studies focusing on the issue of food security have been done at international and national level, but the studies at Uttarakhand state level and at district level, to be more specific are sparse.

Food security exists when people have enough basic food at all times to provide them with energy and nutrients for fully productive lives. When people are asked about highest priority for themselves, very often answer is “food”. The availability of food, access to food, quality of food and stability in the provision of food forms four pillars of food security.

The present study is an attempt to study the issue of food security in 25 villages in three blocks in Nainital district, Uttarakhand. Further attempts have been made to study of penetration of various government schemes like PDS, ICDS, MDM, MNERGS, Annapoorna, and Antodaya in these villages. This study reveals the level of awareness about the government support schemes implemented in these areas. Also, it tells us about the benefits obtained by the households living in these villages.

This study is based on the primary research tools like in-depth interviews and participatory methodology. Our primary source of information was the village-level survey participant. The interviews were held in 25 villages in three different blocks of Nainital District, Uttarakhand using a questionnaire. Within each village, around 10-15% households were selected and interviewed. The survey with the households was done based on non-probability

or convenience sampling. Household which belonged to different communities and residing at distance from each other proved to be quite a relevant source for the present study. This is because the people of these areas were very perceptive about the problems they face in agriculture, water, health and food related issues and in getting the benefits as per their entitlement under various government schemes. In total, the survey has been conducted in approximately 252 households in 25 villages.

Qualitative research has been used to prepare this report. This report does not aim to generalize findings to other districts/states but to understand the situation in few villages of Nainital District. The villages have an average 100 households except certain villages like *Supi*, *Simayal Raikwal* and *Nathuakhan* while other villages such as *Paiyakholi*, *Bhiyalgaon* and *Darim* are sparsely populated.

This present area of study is a part of the fruit-belt and is known for the production of fruits like peach, apple, pear, plum etc. Agriculture is a main source of livelihood and is dependent on rain to a greater extent. There exists huge variation in terms of types of crops grown with respect to people having access to water and its sources for irrigation. People in these areas still use traditional methods for agriculture. Very rarely, farmers have done any cost-benefit analysis of the crops grown by them. Various problems are associated with agriculture like irrigation, non-availability of seeds, fertilizers and pesticides, patchy land and climate change.

Due to these issues, livestock has come up as an alternative and on an average; people have one to two livestock at their place. The milk productivity was low and majority used it for their self-consumption. Some 25% households sold the milk at dairy or in markets. The low productivity can be owed to the lack of nutritious diet, low milk yielding variety, lack of awareness to foresee it as an avenue for development etc.

The agricultural produce is sold in the markets of Haldwani, Delhi and Mumbai. From the farm-gate to the market, the agents and middlemen are involved. Major share of the amount received by the farmer per case goes to packing material (wooden) and as commission to transport and market agents. Private companies like Mother Dairy also purchase higher graded produce but quantity purchased is as per their need and no alternate arrangement (which pay higher prices) is available to the farmers to sell their produce.

Food preservation and storing for times of scarcity has been an age old practice to help satisfy their food needs throughout the year the villagers. The local markets provide an easily accessible option to villagers who find it hard to commute to far-away main market located in Haldwani. These local markets serve as a convenient platform to all villagers and provide resources, food and necessary things of use. 68% of the households studied said that they have either lent or borrowed food in last one year. This exchange occurs as per the requirement usually for a day's diet.

Various schemes like MDM, ICDS provides one-time-meal to all the students enrolled in the school and Aanganwadi. There were no apparent problems with the quality or the quantity of food served to the children, though none of the parents interviewed went to see the food served to their children in the school.

Future research can be done to analyze the cost-benefit associated with different crops, impact of climate change on yield of crops grown commonly in these areas, the possibility of replicating the Himachal Pradesh model of tracking daily price in local market and providing better prices to farmers.

ABBREVIATIONS & ACRONYMS

AAV	Antodaya Yojana
APL	Above Poverty Line
AWC	Aanganwadi Centre
BPL	Below Poverty Line
FAO	Food and Agriculture Organization
FPS	Fair Price Shop
FSC	Food Security Council
FY	Financial Year
GoI	Government of India
GoUK	Government of Uttarakhand
GSDP	Gross State Domestic Product
ICDS	Integrated Child Development Service
JSY	Janani Suraksha Yojana
Kg	Kilogram
MB	Maternity Benefit
MDM	Mid-Day Meal
MNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
NGO	Non-government Organization
PDS	Public Distribution System
SHG	Self Help Group
WFP	World Food Programme

TABLE OF CONTENT

ACKNOWLEDGEMENT.....	i
EXECUTIVE SUMMARY.....	ii
ABBREVIATIONS & ACRONYMS	v
TABLE OF CONTENT	vi
CHAPTER I INTRODUCTION AND RESEARCH CONTEXT	1
1.1 THEORETICAL BACKGROUND 2	
1.2 STUDY OBJECTIVES 3	
1.3 ORGANIZATION OF THE REPORT 4	
CHAPTER II SITUATIONAL ANALYSIS	5
CHAPTER III RESEARCH METHODOLOGY DESIGN	9
3.1 WHY QUALITATIVE RESEARCH?10	
3.2 SAMPLING PROCEDURE10	
3.2.1 The Sample10	
3.2.2 Reference Period11	
3.3 DATA COLLECTION METHODS13	
3.3.1 Primary Data Collection13	
3.3.2 Secondary Data Source14	
3.3.3 Other Methods14	
3.4 SURVEY INSTRUMENTS: HOUSEHOLD SURVEY14	
3.4.1 Survey Format14	

3.4.2	Information Sources	15
3.4.3	Data Analysis	16
3.5	LIMITATION OF THE STUDY	16
3.6	SURVEY INSTRUMENTS: HOUSEHOLD SURVEY	16
3.6.1	Household Questionnaire	17
3.6.2	Women Questionnaire	21
CHAPTER IV	FOOD SECURITY: CONCEPT AND CAUSES	22
4.1	CONCEPT OF FOOD SECURITY	23
4.2	CAUSE OF FOOD INSECURITY	25
CHAPTER V	STUDY AREA PROFILE	26
5.1	GENERAL INFORMATION ON UTTARAKHAND	27
5.1.1	Socio-Demographic Profile of the State	28
5.1.2	Economic Profile of the State	30
5.2	GENERAL INFORMATION ON NAINITAL	31
5.3	GENERAL INFORMATION ON VILLAGES STUDIED	32
CHAPTER VI	FOOD AVAILABILITY AND ACCESSIBILITY:	
CURRENT SCENARIO		34
6.1	PRESENT-DAY AGRICULTURAL SCENARIO	35
6.1.1	Contextual Background	35
6.1.2	Why Fruits?	37
6.2	ISSUES IN AGRICULTURE	38
6.2.1	Few Recommendations by Villagers	43
6.3	LIVESTOCK: THEIR ROLE AND ALLIED ISSUES	44
6.3.1	Situational Overview	44
6.3.2	Issues in Cattle Rearing	47
6.3.3	Some Recommendations	48
6.4	MARKET LINKAGE	49
6.4.1	Overview	49

6.4.2 Major Issues Associated with Market Linkage	50
6.4.3 Recommendations to improve farmer to market channel	53

CHAPTER VII BIODIVERSITY AND TRADITIONAL KNOWLEDGE 56

7.1 BIODIVERSITY	57
7.1.1 Present Scenario	57
7.1.2 Recommendations	60

CHAPTER VIII FOOD SECURITY:

ROLE OF LOCAL MARKET AND SOCIETY..... 61

8.1 ROLE OF LOCAL MARKET	62
8.1.1 Situational Overview	62
8.1.2 Local Market: Its Need and Role	62
8.2 SOCIAL SUPPORT AND ROLE OF COMMUNITY	66

CHAPTER IX GOVERNMENT FOOD SUPPORT SCHEMES:

PENETRATION AND IMPACT..... 68

9.1 INTEGRATED CHILD DEVELOPMENT SCHEME	69
9.1.1 Brief Overview	69
9.1.2 Objectives of the Scheme	69
9.1.3 ICDS Services	69
9.1.4 ICDS Scheme in Villages Surveyed	70
9.1.5 Villagers Perception about Aanganwadi	70
9.1.6 Issues Related to Aanganwadi	73
9.1.7 Recommendation of the Villages	74
9.1.8 General Recommendations	74
9.2 MID DAY MEAL SCHEME	75
9.2.1 Introduction	75
9.2.2 MDM Scheme in Villages Surveyed	75
9.3 PUBLIC DISTRIBUTION SYSTEM	78
9.3.1 Overview	78

9.3.2PDS in Villages Surveyed	79
9.3.3Major Issues Linked withPDS	83
9.3.4Few recommendations by the villagers	84
9.3.5Additional Recommendations	85
CHAPTER X OTHER GOVERNMENT SCHEMES:	
AWARENESS AND BENEFITS	86
10.1 NATIONAL OLD PENSION SCHEME	87
10.1.1Brief Overview	87
10.1.2Eligibility Criteria and Benefits Linked	87
10.1.3 IGNOAPS in Villages Surveyed	88
10.2 ANNAPURNA SCHEME	90
10.2.1Brief Overview	90
10.2.2Eligibility Criteria and Benefits Linked	90
10.2.3 Annapurna Scheme in Villages Surveyed	90
10.3 MATERNITY BENEFIT SCHEME	91
10.3.1Brief Overview	91
10.3.2Eligibility Criteria and Benefits Linked	91
10.3.3 JSY in Villages Surveyed	92
10.4 MNREG SCHEMEV	95
10.4.1Brief Overview	95
10.4.2Eligibility Criteria and Benefits Linked	95
10.4.3 MNREGS in Villages Surveyed	96
CHAPTER XI FOOD CONSUMPTION:	
PATTERN AND PERCEPTION	98
11.1 RECOMMENDATIONS	103
CHAPTER XII DRINKING WATER AND SANITATION:	
HEALTH AND REATEDISSUES.....	104
12.1 WATER: HEALTH AND RELATED ISSUES	105
12.1.1Situational Overview	105

12.1.2 Availability of Safe Drinking Water: Ground Reality	105
12.1.3 Impact on Water Sources	107
12.1.4 The Question of Water Treatment	108
12.1.5 Frequency of Water –Borne Diseases	110
12.2 AWARENESS ABOUT PROPER SANITATION	112
CHAPTER XIII WOMEN: HEALTH AND NUTRITION	114
13.1 WATER: HEALTH AND RELATED ISSUES	115
13.1.1 Existing Situation	115
13.1.2 Recommendations by Villagers	116
REFERENCES	i
ANNEXURE: 1 HOUSEHOLD INTERVIEW QUESTIONNAIRE.....	ii

1.1 THEORETICAL BACKGROUND

Food security has a strategic role in the development of a nation due to the facts that:

- (a) food holds an important role in the creation of quality human resources;
- (b) access to sufficient food and nutrition forms the most basic human right; and
- (c) food security is one of the main pillars supporting sustainable economic and national security (Hermanto, 2005).

Large numbers of studies focusing on the issue of food security have been done at international and national level, but the studies at Uttarakhand state level are sparse. At the district level, earlier studies related to food security have been done in the districts of Bhageshwar and Chamoli by GoUK (Government of Uttarakhand). In addition to this, another study was conducted to analyze food insecurity at district level in Uttarakhand. Reference for both these report have been given at the end of this report. Apart from this, various studies have been done at national level in different part of the country. No research related to food security and support has been done in these villages earlier. Thus this study is important in a way that it takes into account local people's views and their awareness about various food and health related issues, food support and other government schemes and their knowledge about the existence of biodiversity and reasons for change in agriculture.

This study can prove to be vital to arrive at an understanding of patterns in human responses, for future studies. This sort of work was needed in these villages located in the backward blocks of Nainital to know what one thinks about food security and how much does a villager know about food support schemes of the government. This study is a small step towards gaining a better understanding in knowing the awareness of the schemes and its associated benefits, the problems people face in availing the benefits in hilly terrain which lack proper means of transport.

This report is an account of a descriptive study in 25 villages in three blocks in District Nainital, Uttarakhand. The study was a qualitative one involving interviews with a convenience sample of various households. The main and broad objective of our study is to assess the food security and study the penetration of various government run & funded food support schemes in few villages.

It is toward this end that this report is written. Although there is a considerable amount of research carried out in different parts of the country but this is so far, the first attempt to study the issue of food security and food support schemes in the villages of Nainital District.

Qualitative research has been used to prepare this report. This report does not aim to generalize findings to other districts/states but to understand the situation in few villages of Nainital District. However, in terrain and situations similar to these villages, it can be assumed that the findings of these reports are the same in those areas too.

1.2 STUDY OBJECTIVES

With this background, a study was initiated with the following objectives:

GENERAL OBJECTIVE

The general and main objective of our present study is to assess the food security and study the penetration of various government run & funded food support schemes like PDS, ICDS, Annapoorna and Antodaya etc. in few selected villages of three backward blocks in Nainital district of Uttarakhand.

SPECIFIC OBJECTIVE

- Also, there are some specific objectives of our study. These are:
- To study the availability of food produced from agriculture and other wild food(s) obtained from nearby areas as a result of biodiversity
- To identify the difficulties faced by villagers in agriculture and their ideas for improvement.
- To understand the food availability and its accessibility at market, community and government level to supplement food thereby ensuring food security.
- To know about the awareness level of various government schemes among the people and also, about the entitlement of the numerous benefits associated with these schemes.
- To understand the penetration of government support schemes like ICDS, PDS, Annapoorna, Antodaya, MNREGA, Old Age Pension and Maternity benefit

- To study the frequency of access to food under PDS, ICDS, Annapoorna and Antodaya.
- To understand the status of drinking water and the perception of the people about the nutrition and health

1.3 ORGANIZATION OF THE REPORT

The primary focus of this report is to study the issue of food security in few villages of Uttarakhand using primary data. With the help of various methods an attempt has been made to provide some ground truths and in-sights. This report is divided into 13 chapters. The remainder of this report outlines the general themes of the study. The next chapter (chapter-two) provides a snapshot of the current situation prevalent in the study area.

Chapter three briefly explains the methodology used during the field work, while chapter four explain the concept and cause of food insecurity. In the next chapter, some general information has been mentioned related to the state, district and the villages where the study was conducted.

Chapter six discusses the agriculture and related issues. Also, the role of livestock and the issues faced in cattle rearing are discussed in this chapter. Further, the linkage of market with the farmers for all agriculture and related need is discussed. Next chapter deals with the role of society, market and biodiversity to ensure food security.

Chapter nine and ten are based on the government schemes running in the areas and talks about the level of awareness and penetration in these villages. Last few chapters are based on food consumption. Further, it talks about the access of villagers to drinking water and the issue of health associated to women and other family members.

The concluding chapter is based on the views of people about health and healthy food. The current situation and some recommendations to deal with all the issues are given in many chapters.

2.0 SITUATIONAL ANALYSIS

The economy of the region is primarily dependent on agriculture. During the study, it was observed that over 90% of the families had agriculture as their primary occupation. In spite of this heavy dependence on agriculture, the facility available for irrigation is a bare minimum and that too is limited to the low lying areas which can use water from streams for irrigation purposes. Hence, it would not be wrong to say that economy of the area is a gamble on monsoons. As rainfall in the area is non-reliable; thus, economy and food security in the area is also highly variable and depends on the timing and degree of the rain in the area.

The major crops in the area are fruits like plums, peach, apricot, apple and pear and vegetables like potato, cabbage, peas etc. Most of this is grown as cash crop and sold in the Haldwani market which is the major market for the area. Apart from Haldwani, some of the produce is also sent to Delhi and Mumbai. There is a noticeable shift in the cropping pattern in the area. Farmers have shifted from food crops like wheat, jaun, madua, makka etc. to the cash crops.

An interesting fact which was observed in the study area was the use of traditional methodology for agriculture; no mechanical instruments like tractors, harvesters, threshers etc. were visible in any of the fields. One major reason for this can be attributed to the fact the most of the farmers had small size of land holdings. Also, even if the size of the land holding was large enough, the holding was fragmented thus making it difficult for the use of technology in agriculture.

Another problem faced in the area was the rapid shift in the climatic pattern which was marked by longer and hotter summer. The villagers frequently raised the issue of rainfall getting delayed by a few weeks for the last few years. Also; due to the lack of irrigation facility in the area, the effects of delay of monsoons are felt even more. This not only leads to lower productivity of the crop but also delays the timing of planting of the rainy season crops. During the study, one reason for the higher temperature in the area was credited to the increasing incidents of forest fire, which was mainly caused by the dried pirul (dried pine leaves) which are highly inflammable.

The villagers also pointed to the changing situation of the forest in the area. Earlier, baaj and burash used to be the main trees in the forest. Pine was planted in the area by the Britishers as its resin (Lisa) was a major source of revenue for the government; however, it has now displaced baaj and burash, as the chief tree in the jungle. With time, many of the disadvantages associated with pine have come to the fore. These include forest fires and reduced land productivity as the moisture content of the soil has decreased. During forest fire, additional losses are incurred due to loss of herbs and shrubs.

Due to reduction in the planting of food crops in the area and decreasing availability of edible food items from the forests, the dependence of the villagers for food has increased drastically on both market and government schemes. Most of the households grow crops that support them for 2 months or less. For the remaining period of the year; they are completely dependent on Fair Price Shop and the market for ensuring food availability. Public Distribution System plays a very important role in satisfying the food requirements of the people in the area. Especially in villages where the P.D.S shops are functioning efficiently, it remains to be the main source of food for the households.

Mid-day Meal scheme and ICDS (Aanganwadi) are the two government schemes which provide food to school children. Broadly speaking, food is provided in all the schools and Aanganwadi centre in the area. However, some households were not satisfied with the quality of the food provided to their children. Aanganwadi has played a significant role for the pregnant women in the area by providing healthy daliya in prescribed quantity. However, many of the villagers complained about the degrading quality of food supplied under the maternity benefit schemes.

One major problem which was faced by the people was of clean and safe drinking water. The IPHD pipelines did not provide water all year round and severe problems were faced during summers in the area. *Swajal* lines were also laid in many of the villages, but the water from was dirty and not fit for drinking in most of the villages. Thus, the villagers mostly depended upon natural water sources (nuala) for the availability of drinking water. The fast receding level of water in these sources was also a cause of concern for the people. Hand pumps were also a source of support to the villagers who used them as a source of potable water.

Treatment of water was mostly absent in the village. The villagers consumed the water directly and very small number of instances of treatment of water was noted. Due to this, water borne diseases like jaundice and diarrhea were very common in the villages.

In general, the villagers did not have much problems related to food security in the region and enough food was available to all family members in all the families, however, problems existed regarding the nutritional value of the food little or no information existed about a balanced diet, its components and its necessity. Thus, no importance was given to the nutritional value of the food consumed and provision of information regarding the same to the villagers was of great importance to ensure a healthy future for the region.

3.1 WHY QUALITATIVE RESEARCH?

Qualitative Research Methodology was used for the purpose of this study. The rationales for this are many:

- We were more concerned with understanding the views of people, their knowledge, belief, awareness etc.
- Qualitative Research allows the subjects being studied to give much "richer, in-depth" answers to questions put to them.
- It was particularly more useful for in-depth study of small group of people.
- It also allows getting highly detailed rich descriptions of respondent's opinions, which might have been missed by any other method.
- Qualitative research is conducted in a natural setting, without intentionally manipulating the environment.

3.2 SAMPLING PROCEDURE

3.2.1 The Sample:

Village Sample:

This study was conducted in Nainital district of Uttarakhand. Further, in Nainital district, the study was done in 25 villages (some revenue and some non-revenue) located in three blocks namely; Ramgarh, Dhaari and Okhalkanda. Three villages each were surveyed in block Dhaari and Okhalkanda respectively and remaining 19 villages were surveyed from Ramgarh Block. During the survey, various households located at top hills, mid hills and foot hills and located at a distance from each other have been covered. Based on discussion with Gene Campaign's officials, villages which were located far away from the road were chosen for this study. This was done as the some villages, which are in proximity to roads may have better access to market and other modes of transportation and might have resulted in different answers during the research survey. So, to achieve some consistency in terms of availability of food and its accessibility, villages which are far-away from the roads were selected as a

part of our study. Of these 25 villages, 5 villages were additionally covered to gain further understanding in our research at primary level.

Household Sample:

Within each village, around 10-15% households were selected and interviewed. The survey with the households was done based on non-probability or convenience sampling. These 10- 15% households can be treated as the representative of the total sample. This is because utmost care has been taken to cover household of different income groups, located at distant places, belonging to different castes etc. In total, the survey has been conducted in approximately 252 households in 25 villages.

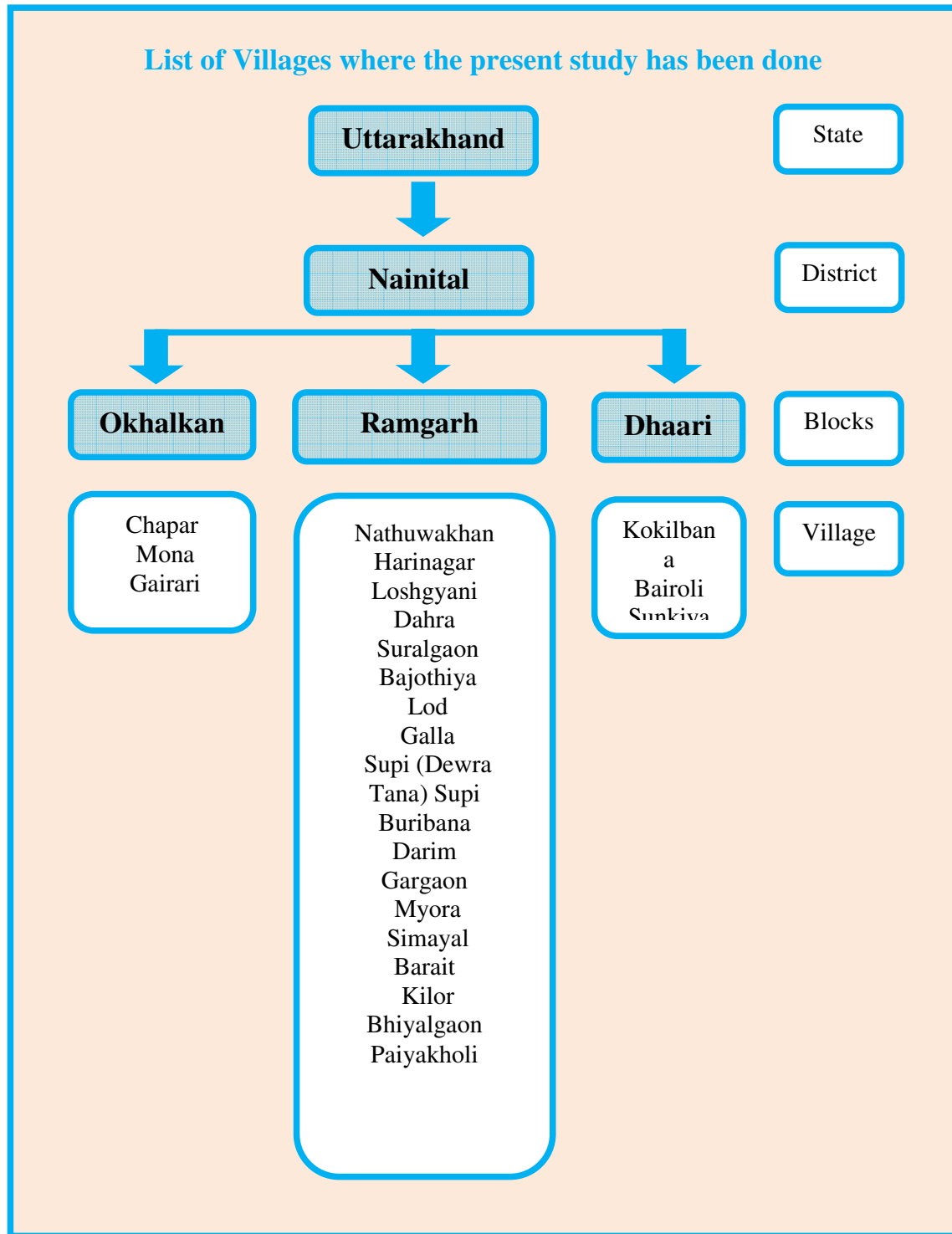
Table: 3.1

Village Sample – A Snapshot		
State	No.	Uttarakhand
District	1	Nainital
Block	3	Ramgarh, Dhaari and Okhalkanda
Villages Covered	25	Nathuwakhan, Harinagar, Loshgyani, Dahra, Suralgaon, Bajothiya, Lod, Galla, Supi (Dewra Tana), Supi, Kokilbana, Sunkiya, Buribana, Darim, Gargaon, Myora, Simayal, Barait, Kilor, Bhiyalgaon, Paiyakholi, Chapar, Mona, Gairari, Bairoli

3.2.2 Reference Period:

The reference period of the study for selection of households and collection of field data was May to June. The semi-structured interviews were conducted in all the 25 villages from 25 May, 2012 and ended on 15 June, 2012. Once the data field work ended and the data which was collected was captured into Microsoft Excel 2010 for further analysis.

Figure: 3.1



3.3 DATA COLLECTION METHODS

3.3.1 Primary Data Collection:

In depth interviews:

In qualitative research, interviewing is the major source of the qualitative data for understanding the phenomenon under study (Drew, Hardman & Hosp, 2008; Fontana & Frey, 2005). Interviews provide an opportunity for the researcher to investigate ideas and beliefs of participants further and to gather data which may not have been obtained by other methods such as observation or survey (Cohen et al., 2000; Shaughnessy, 2007). One of the advantages of using the interview is that it is flexible (Drew et al., 2008).

So, in this study, PRA tools have been used and the primary data was collected through semi- structured interviews with various households. The central part of the PRA used was semi- structured interviewing, where interview was based on a check list and open ended questions. These interviews were guided informally like conversations, while staying focused on our discussion areas. The respondents were interviewed individually, at their own place. They were encouraged and probed to express their views at length. Also, we used critical incident study, where the respondents were asked to comment on real events/ experience rather than giving generalized perceptive views. This helped us to know more about their beliefs and problems faced by them.

Participatory Methodology

A participatory methodology was also used to collect information at village level, which includes household visits, market visits and interviews with major stakeholders including local leaders, few elderly and prominent people who have key village specific information.

Thus apart from the 252 households which were interviewed across 25 villages in 3 blocks on various aspects of household food security, informal interviews were also

conducted in few villages, which enabled us to get a broad overview of the major issues affecting food security in these village.

3.3.2 Secondary Data Source:

The secondary data about the total number of households living in each of these 25 villages was obtained from Uttarakhand State government website. Also, other relevant information was obtained from associated earlier studies done at state level.

3.3.3 Other Methods:

Diary Method

A personal account of daily discussions, key information and interactions was maintained in diary, so that no important information is missed.

Case Study

This method provided an in-depth study of few individuals, who further helped us to get different views and sometimes, helped in validating the views/responses of other respondents.

3.4 SURVEY INSTRUMENTS: HOUSEHOLD SURVEY

3.4.1 Survey Format:

A draft of survey form was designed by Gene Campaign and it was then discussed extensively among us to develop a better understanding about various issues/questions given under different parts and sections. This discussion was important to orient ourselves about the project and understand the importance of every question and section. The survey was translated into Hindi and key words were replaced according to local usage of the language, so as to make it easy-to-understand survey. Hence, based on our discussion, the questionnaire was finalized for the study.

The questionnaire addresses indicators related to key component of food security and food support schemes. Collected variables have been grouped into different sections in the questionnaire.

Table: 3.2

Survey Questionnaire -At-a-glance	
Part- I	Background
Part- II	Food Availability & Accessibility
Section -1	Agriculture & Livestock
Section -2	Biodiversity
Section -3	Market
Section -4	Social Support
Section -5	Government Support
Part- III	Food Utilization
Section -1	Food Consumption & Perception
Section -2	Nutrition & Health
Part- IV	For the Woman

The design of the questionnaires was intended to allow a better understanding of all the food support and food security related issues. The questionnaire was made available in two languages (Hindi and English).Hindi and sometimes, Kumauni were used as a medium of conversation during the interview.

3.4.2Information Source:

Our primary source of information was the village-level survey participant. Apart from these households, vital information was provided by other key stakeholders, elderly and prominent people. Market visit also provided specific information about the prices, food availability and frequency of purchase by various households. There was no information available with the village head (known as Sarpanch). All respondents were interviewed for between 30-45 minutes. In case of doubt(s), clarification etc. regarding the answers of the respondents, a follow up

meeting/discussion was held with him/her to develop better understanding and clarity about his/her views.

3.4.3 Data Analysis:

After the interviews, the information was captured into computer files. Data from the semi-structured interviews was entered in a format compatible with standard statistical programs- Microsoft Excel 2010. Output tables were generated based on this for different parameters. These tables/graphs etc. have been used for further analysis and preparation of this report.

3.5 LIMITATION OF THE STUDY

Following are some of the limitation of the present study:

- Since this study is based on qualitative research, only small numbers (10-15%) of respondents were studied. This was due to the fact that data collection methods and interview was time consuming.
- The study is restricted to Ramgarh, Dhaari and Okhalkanda block of Nainital district. Hence it does not represent entire district and the findings cannot be generalized for other districts.
- Some qualitative data collected and information presented is based on approximation as suggested by households and hence may not represent accurate figures.
- The selected sample may not represent accurate figures for the whole area as the area of the study was diverse.

3.6 QUESTIONNAIRE DESIGN

Questionnaire used for collecting information was divided into 4 parts. This was further divided into various sections and sub sections. This questionnaire was bilingual, with questions in both Hindi and English language.

3.6.1 Household Questionnaire:

Part- I BACKGROUND CHARACTERISTICS

For each household member, the survey collected basic information on household size, land holding (approx.)*, education and some information about the member(s) working outside home or village.

Part - II FOOD AVAILABILITY & ACCESSIBILITY

This part was more focused towards the availability of food from agriculture and as a result of biodiversity. Also, it was intended to know the type of farming people do in these areas, whether it's traditional, organic or some technology based. This part includes questions to know the types of crops people grow in these villages. Whether they grow some herbal plants or do they consume some traditional vegetable/ fruit/ crop etc. What are the sources of irrigation in these areas and what do farmers do, when they don't get sufficient rainfall or at the time of water scarcity? On what basis, do these farmers take decisions related to agriculture?

Apart from agriculture, this part of the questionnaire talks about the availability and accessibility of food at three levels. i.e. Social, Community and Government. Efforts have been made to understand the concept of food security at society level, by understanding the practice of exchange of food and related items.

Since the government run various food support schemes, this part dealt with the awareness about the schemes and entitled benefits, among the villagers. This would provide the details about the penetration of these schemes and the off-take its beneficiaries have.

Section -I: Agriculture & Livestock

In this section, the questionnaire collects information regarding types of crops, vegetable, fruits etc. grown, the number of years people are cultivating these crops, fruits and vegetables. Also, this section talks about the availability of irrigation sources in these villages. Following irrigation, it talks about the biggest problems people in these areas face in agriculture. We also tried to know the

ideas/recommendations the households have to improve/deal with the problems they face in agriculture.

This section also gathers information about livestock and sources of their fodder and other feed for these animals. Further, questions were asked regarding the milk people get from cow/buffalo/goat etc. Do they sell the milk in the market or to any private dairy or to any dairy cooperative or whether they consume it at their place itself?

Section -2: Biodiversity

In this section, questions were targeted to collect information about the types of wild food local people get from nearby forests, the time duration of getting these food(s). Some information was also collected to know if people preserve or dry any food (fruits, vegetable etc.) for lean times. And if they do preserve it, then questions were asked to know the procedure of preservation/drying and the time till these dried/preserved food lasts?

This section was important to understand the awareness or/and knowledge people of these areas have, regarding the availability of some wild foods in the nearby or forest areas.

Section -3: Market

This section was targeted to know the availability of food at the market level. This section provides information about the importance of market, located both at village level and nearest town (i.e. Haldwani). It also seeks information about the buying behavior of villagers from market, factors which control(s) their purchasing behavior of food and related products, the frequency of purchase of these products. Questions were also asked to know the usual expenditure a household incurs on food in one month.

Section -4: Social Support

In this section the questionnaire collects information about the practice of lending or borrowing to or from others. This question is further substantiated to know the frequency and form (i.e. in-kind or cash) of exchange of food and related product(s) in

these villages. This section deals with availability of food and its accessibility at the community level.

Section -5: Government Support

Following the two sections which were aimed to understand the availability of food at the market and community level, this section was aimed to know the availability of food and its accessibility at the government level. Since there are various government food support schemes being implemented in these villages, this section consists of further sub-section.

In first sub-section, information was collected about the ICDS. This part of the questionnaire deals with the availability of food at Aanganwadi Centre to both, children below 5 years and pregnant women.

Also, this sub-section was to understand the quality of food as per the parents and children, any problems they face while utilizing these benefits. Another question was to know the problems faced by the children or pregnant women and their ideas to improve the AWC services.

The next sub-section was on similar lines of the above sub-section. Here, the main focus was on Mid-Day Meal (MDM) scheme. This includes questions for both, Parents and children. It seeks information about the quality and quantity of food children get in school, problem(s) associated with MDM and most importantly, their ideas to improve the problem(s) faced.

In the third sub-section, the questions were targeted to PDS and other support schemes provided by Government. The questionnaire collects information regarding the type of PDS card (if they have one), the quantity and quality of food household receives as per the unit mentioned on his card. It also aims to understand the problem(s) faced by villagers in availing this scheme. Also, if they face some problem, then what is their idea of improving the PDS shops?

Apart from PDS, the questionnaire had questions based on other government support schemes like Antodaya, Annapoorna, MNREGA, Maternity Benefit and Old age

pension. For all these schemes, questions were framed to know about the awareness of these schemes

Among villagers, the benefits they are entitled for and the problem(s) they face in getting the card or the benefits as per their entitlements.

Part - III FOOD UTILISATION

Part three of the questionnaire consists of questions which captured the perception of the people regarding their idea of nutritious food, the frequency of consuming the nutritious food among family members. Another interesting part was to study the availability of food crops at earlier times (say 20-30 years ago) and its non-existence in present time, with reasons for its absence over a period of time. Also, this part deals with a major issue of drinking water and sanitation and the diseases which are borne as a result of contaminated or impure water.

Section -1: Food consumption and perceptions

This section gives information about the idea of nutritious foods among the various households. It also questions the number of times; the food is cooked in a day. The information were also collected about the best and worst time period of the year, in terms of availability of food and the reasons for the same as well. The information on eating a food which old age people use to eat during their childhood, which is no longer available with reasons explaining its absence were also collected.

Section -2: Nutrition and Health

In this section, Information was collected about the main source of drinking water, the type of toilet facility and the problems associated with the quality of water. Further, questions were targeted to know how people treat and store drinking water. Finally, the information regarding the problems associated with water borne diseases were gathered.

3.6.1 Women Questionnaire:

Part - III FOR THE WOMAN

This last part of the survey has a women questionnaire designed to collect information from woman only. This is because a woman is usually the one who cooks food for the family members and is, also the last member of the family to consume food.

This part aims to capture information about her views of healthy food for the family. Also, the information based on her views was collected for the quantity and good quality of the food.

This section gives information about the consumption of some different and/or healthy food by mother during the time of pregnancy and breastfeeding. Apart from mother, what special food do parents give to their children during weaning period?

So, in a nutshell, this questionnaire tries to gather maximum possible information about all major aspects of food security and food support schemes.

4.1 CONCEPT OF FOOD INSECURITY

The food security issue emerged in the 1970s along with the global food crisis (Soekirman, 2000). Countries with populations facing starvation are considered to be countries without food security. Therefore, at that time, the concept of food security was mostly discussed from the point of view of food availability at the national and global level (Foster, 1992; Maxwell and Frankenberger, 1992). According to Foster (1992), a shift occurred in the focus of food security analysis from availability of food nationally or globally to availability of food for groups (individuals) experiencing starvation. This led to the understanding that there were internal factors which impeded food acquisition at the household or individual level. This impediment to food access was related to weak entitlement at the household or individual level (Sen, 1981), causing an inability to exercise 'control' over food. The degree of entitlement has a linear relation with the level of stability of household or individual access, which is affected by what a person owns, produces and sells, and what he or she inherited or were given (Sen, 1981; Maxwell and Frankenberger, 1992).

Availability of food and access to food as described above are two important determinants of food security according to Braun et al. (1992). However, availability of food in itself does not guarantee accessibility to food. Access to food includes physical and economic dimensions. Physical access is linked to authority over food production at the household level, while food purchasing power is a reflection of the capability to have economic access to food (Maxwell and Frankenberger, 1992; Braun et al., 1992; Haddad, 1997).

FAO defines food insecurity as "food insecurity exists when all people, at all times, do not have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996)

Food insecurity is measured in terms of three factors -

- food availability
- food access
- food absorption

Initially, the focus of Indian policy makers was simply on food grains production and availability. Later, it became apparent that even if adequate grains were grown, the access to available food is denied as the poor could not afford to buy them due to lack of purchasing

power. Amartya Sen popularized the concept of entitlements (Sen, A.K, 1977) and provided a distinction between food availability and food access. Food procurement for PDS and a number of employment guarantee schemes emerged to enable poor to access the available food stocks.

The generally accepted definition of food security was agreed upon at the World Food Summit in Rome, Italy, in 1996. Food security was defined as “the condition where the need for nutritious food of each and every individual is met in terms of quantity and quality, in order to lead an active and healthy life sustainably, in conformity with local culture”.

Food Security also implies livelihood security at household level and involves ensuring both economic and physical access to balanced diet, safe drinking water, environmental sanitation, primary education and basic healthcare. It basically implies that the entire population in a community has access to enough food at all times for leading an active and healthy life. (World Bank, 1986; Parikh, 1998) Today, food security also implies an individual's ability to absorb a nutritious diet (WFP-MSSRF 2001). Food security is achieved when all people at all times have access to sufficient food for a healthy and productive life and has three main components- food availability, food access and food utilization (Haddad, 1997)

For any household, food is basically available from three sources:-

1. Own agricultural production
2. Purchase using cash or through barter (Paicha^{#1})
3. P.D.S

How much food the household can actually access depends on its purchasing power, which can be from market sale of agricultural produce or credit or wage income. Hence, to analyze the amount of food actually consumed will take into account both availability and access.

4.2 CAUSE OF FOOD INSECURITY

¹ Paicha refers to the process of exchange of food grains and related product(s) within same/different community during shortage of food and related product(s). It is a normal practice being followed in the villages of UK.

The major problem for food security at the national level is that **“the growth of food demand is greater than the growth of food supply”**. The increase in food demand is caused by population and economic growth, increased purchasing power, and broadening tastes. Nationally, these factors have caused a rapid increase in food demand in terms of quantity, quality and diversity (BKP, 2006b; DKP, 2006b). In response, the Food Security Council (FSC) identified the problems and challenges facing the supply, distribution and accessibility of food. Problems facing food supply are:

- The rate of increase in demand for several food commodities is faster than the rate of increase in their production
- Productivity of several food commodities is relatively stagnant
- There is limited production capacity

Productivity stagnation is caused by scarcity of inventions and lack of knowledge provided to farmers about innovative technologies, limited access of farmers to sources of capital, limited implementation of technology and means of production. The lack of knowledge provided to farmers is caused by the weakness of the agriculture extension system.

The problems facing food consumption and diversification are:

- A great number of the poor and unemployed with low access to food;
- Insufficient knowledge and awareness of the community regarding food diversification and nutrition;
- The still dominant consumption of rice as a source of energy;
- Insufficient awareness and application of sanitation systems and household hygiene
- Insufficient public awareness about food security.

Factors that can potentially be linked to food consumption and diversification are natural resources diversity, biological diversity and diversity of local food sources and traditional foods, which may be used in the development of food diversification.

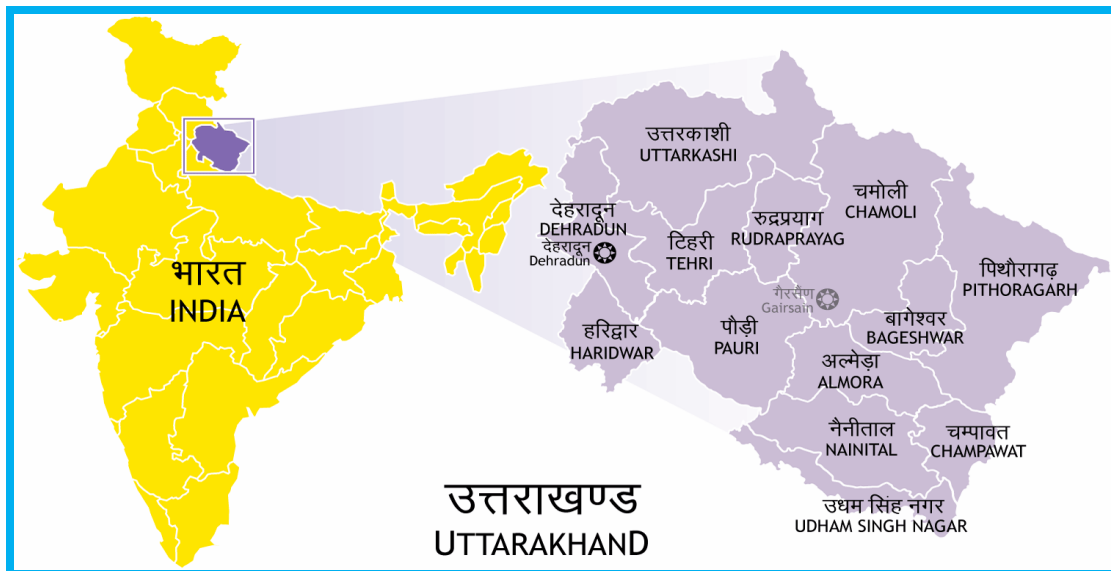
5.1 GENERAL INFORMATION ON UTTARAKHAND

Uttarakhand, the 27th state of the Republic of India and was carved out of Uttar Pradesh on 9th Nov 2000. The state has 13 districts, 49 tehsils, 73 towns, 95 development blocks, 7541 Gram Sabhas, 671 Nyay Panchayats, 16826 inhabited villages and 86 urban settlements within their administrative boundaries. These 13 districts are further grouped into two revenue divisions- Kumaon division and Garhwal division.

1. Garhwal Revenue Division includes following 7 districts namely

- Dehradun
- Tehri
- Pauri Garhwal
- Uttarkashi
- Chamoli
- Rudra Prayag
- Haridwar

Figure: 5.1: Map of Uttarakhand



2. Kumaon Revenue Division includes 6 districts which are:

- **Nainital**
- Almora
- Pithoragarh
- Champawat
- Bageshwar

- Udham Singh Nagar

Geographically, the state has been broadly divided into three zones:

1. Upper hills (Uttarkashi, Chamoli, Rudraprayag, Pithoragarh and Bageshwar)
2. Middle hills (Tehri-Garhwal, Garhwal, Almora, and Champawat, the hill regions of Nainital and Chakrata tehsil of Dehradun)
3. Foothills (the remaining area of Dehradun, Haridwar, Udham Singh Nagar and the remaining area of Nainital)

Uttarakhand is primarily a mountainous state, as the plains constitute only about 10% of its total geographical area. The state is part of the central Himalayas and most of the northern area comprises of high ranges and glaciers and the lower reaches are covered by dense forests.

The economy of Uttarakhand is predominantly agrarian as 78 % of its population is dependent on agriculture for livelihood. Land holdings are small and fragmented and irrigation facilities limited, especially in hilly areas, hence, contribution of agriculture is marginal in creating livelihood options.

5.1.1 Socio-Demographic Profile of the State:

As per 2001 census, Uttarakhand had a population of approximately 8.48 million. Out of these, the females constitute 49 % and males comprise of 51%. The male to female ratio is 1000: 964. Most of the population (approx. 6.3 million) of Uttarakhand resides in the rural areas. Literacy rate of the state is about 72.28% which includes 84.01% of males and 60.26% of females. The per capita income of the population of the state is Rs.12000 per year.

Table: 5.1

State Profile

Indicator	Number / %age
Geographic Area (in sq. kms)	53,484
Number of Divisions	2
Number of Districts	13
Number of Blocks	95
Total Population (in million)	8.48
▪ Male	4.32
▪ Female	4.16
Sex Ratio	962
Literacy Rate Total (in %)	71.6
▪ Male	83.3
▪ Female	59.6

There exists a huge variation in terms of population of the various districts. Four districts, namely Dehradun, Haridwar, Udham Singh Nagar and Nainital account for 55 % of the state's population, on adding Tehri Garhwal, Garhwal and Almora, this account for 79 %. This clearly shows a relatively high concentration of population in the middle hills and foothills.

The state has got very low population density (150 persons per square kilometer²) and growth rate of population is also less than national average. Uttarakhand is a predominantly rural state with 16,826 villages, of which 81% have a population of less than 500. Nearly 17 % of the villages have a population ranging between 500-1999 and villages with population of greater than 2000 are approximately 3%. The small size of settlements and their widespread distribution is a challenge for delivery of any service in the state.

Table: 5.2

All Villages Profile

² Source: 2001 Census

Indicator	Number / %age
Number of Inhabited Villages	16,826
Population	
▪ 1 - 500	80%
▪ 501 - 2000	17%
▪ 2001 - 5000	< 3 %
▪ 5000 +	NIL

70% of the population depends mainly on agriculture for livelihood. But agriculture does not provide sufficient income levels to the people and also contributes marginally³ in the economy. There is hardly any other main source of livelihood deriving from the secondary or tertiary sectors. These sectors are very poorly developed primarily because of inaccessibility and vulnerability of mountain regions.

In the state, around 14 % of the total area is under cultivation and of this 55% of the land is rain fed. The average land holdings are small, scattered and divided into many patches. It ranges from around 0.68 ha in the hills and 1.77 ha in the plains.

5.1.2 Economic Profile of the State:

Uttarakhand is one of the fastest growing states in India. The state's economy has shown a healthy growth path during the recent years. The real GSDP grew around 9%

(average) during FY2004-FY2009 period. Tertiary sector contributes around 49% in

GSDP followed by the secondary and primary sectors at 35% and 17% respectively in FY2009. Share of secondary sector in the GSDP has also shown excellent growth, it has grown from 22% in FY2001 to 34% in the FY2009. However, the share of primary sector has come down from 28% to 17% during the same period.

³ 19.45% share in SGDP in 2006-07 (at 1999-2000 prices); Source: Directorate of Economics & Statistics, Uttarakhand

The state has been ranked 2nd in industrial investments, 3rd in primary education, 6th in Health Services, 10th in the consumer markets, 11th in agriculture, 12th in macro economy and 18th in Infrastructure.

5.2 GENERAL INFORMATION ON NAINITAL

Nainital district forms part of Kumaon Division of Uttarakhand State. The district comprises of four tehsils namely, Nainital, Dhaari, Haldwani and Kosya Kutoli and eight developmental blocks viz., Haldwani, Ramnagar, Kotabagh, Dhaari, Betalghat, Ramgarh, Bhimtal and Okhalkanda.

Nainital, having its administrative headquarters at Nainital city, is one of the districts of the state of Uttarakhand. Located in the Kumaon Division of the state, it shares borders with Almora district on the north and Udham Singh Nagar District on the south. The largest town of the district is Haldwani. The total population of the district is 7, 62,909 as per 2001 census.

Figure: 5.2: Administrative Map of Nainital District

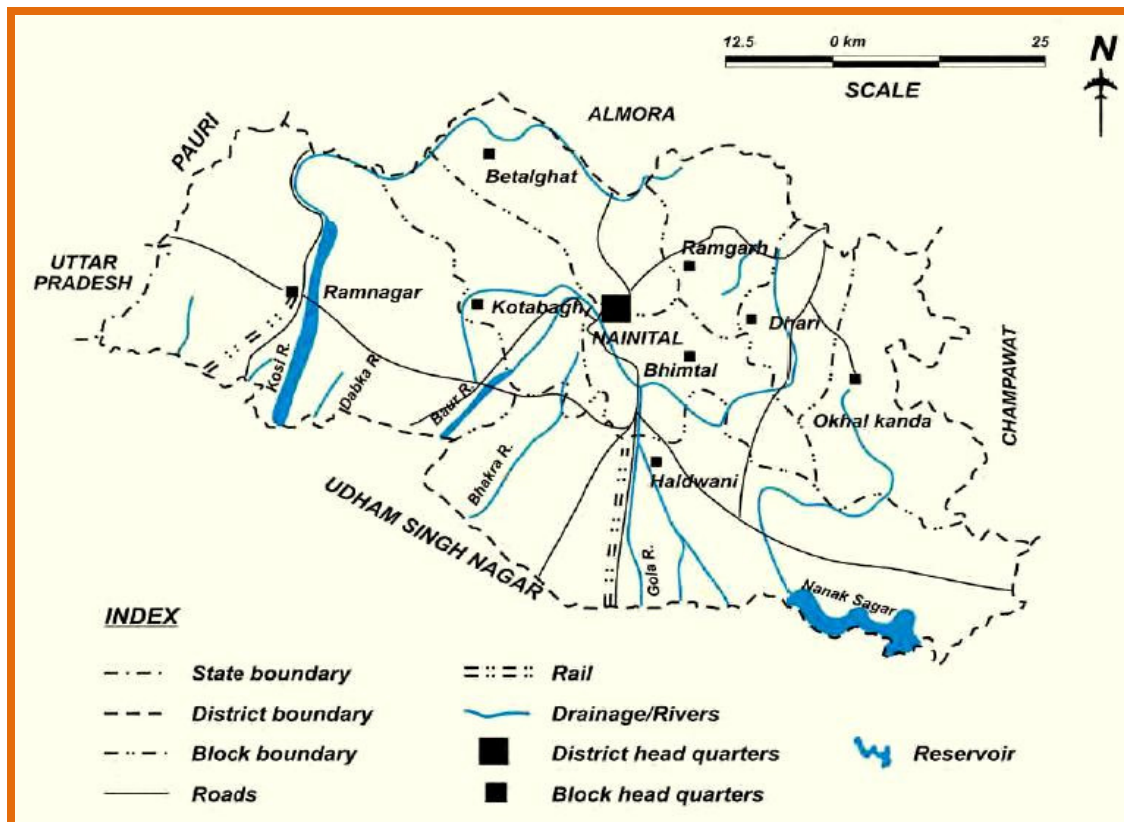


Table: 5.3

Details of developmental blocks and tehsils, District Nainital		
Name of Block	Name of Tehsil	Number of villages
Haldwani	Haldwani	252
Ramnagar	Haldwani	187
Betalghat	Nainital	133
Bhimtal	Nainital	112
Kotabagh	Nainital	115
Okhalkanda	Dhaari	107
Dhaari	Dhaari	46
Ramgarh	KosyaKutoli	130

5.3 GENERAL INFORMATION ON VILLAGE STUDIED

The villages have an average 100 households except certain villages like *Supi*, *Simayal*, *Raikwal* and *Nathuakhan* while other villages such as *Paiyakholi*, *Bhiyalgaon* and *Darim* are sparsely populated. Villages like *Harinagar*, *Lod* which have a comparatively greater number of households. On the other hand, villages such as *Chapar* and *Mauna* are densely populated.

Sex ratio at the block level could not be obtained from the official data. Some of the villages are settled on caste basis. *Harinagar*, *Lod*, *Bhiyalgaon*, *Paiyakholi* are some pure SC populated villages while *Sunkiya*, *Buribana*, *Simayal* are certain villages which have a greater proportion of population belonging to general category. The village profile including the number of BPL and APL families in these villages is given in the following table⁴.

⁴Source: www.euttarakhand.nic.in

Table: 5.4

Village	No. of BPL families			SUB-TOTAL	No. of Non-BPL families			SUB-TOTAL	TOTAL
	Gen	SC	Others		Gen	SC	Others		
Barait	3	2	0	5	3	3	2	8	13
Mauna	1	4	18	23	5	10	35	50	73
Bhiyalgaon	0	32	1	33	0	44	2	46	79
Simayal	3	0	3	6	2	0	13	15	21
Harinagar	0	21	0	37	0	21	0	21	58
Suralgaon	0	0	6	6	3	5	17	25	31
Supi	0	23	85	108	5	50	160	216	324
Darim	4	22	3	44	3	40	4	47	91
Chapar	4	9	32	45	0	14	27	41	86
Nathuakhan	3	7	26	36	5	10	25	44	80
Myora	6	15	15	36	5	13	27	45	81
Loshgyani	3	16	33	54	0	10	29	39	93
Lod	0	8	11	19	0	13	20	33	52
TOTAL	27	159	233	452	31	233	361	630	1082

6.1 PRESENT- DAY AGRICULTURAL SCENARIO

6.1.1 Contextual Background

Uttarakhand is a hilly state wherein the land is basically rain fed. It is due to this reason that there is a vast disparity in use of fertilizers, mechanization, source of irrigation etc. Various sources of irrigation are canals, tube wells, wells, ponds etc. But due to undulated topography, these sources are not available in all parts of the state and thus in hills, only 10% of net sown area is irrigated while in plains near about 88% of net sown area is irrigated. Most of the land holding are small & marginal. Only about 3 percent of land holdings are above 4 ha in size and cover about 22 percent of the total cultivated area⁵. As large numbers of holdings are under small and marginal categories, economies of scale cannot be availed of, and so the input cost per unit of output is higher. Therefore, it becomes a difficult task to make agriculture a profitable occupation especially in the hills. The farmers in the area are marginal with an average agriculture land holding size of less than 26 *naalis* (less than 1 acres).

This was very much prevalent in the villages covered for the purpose of the study. It was generally observed that irrigated land was scarce and most of the agriculture was primarily rain dependent. But unlike the other areas of the state, these area in particular follow chemical farming. It is because this region belongs to a major horticulture belt. This belt serves as the 'fruit basket' not only for the state but also the areas of Delhi and NCR. Horticulture is the prime source of income for the people in the region.

It was seen that the people of the region have been deviating from the 'traditional farming' wherein they used to grow millets and other grains. Of late, they have been growing more and more commercial or the cash crop for selling in the market.

This can be substantiated by the fact that nearly 75% villagers are growing cash crops while rest 25% villagers are into food cropping. Most of them grow both cash as well as food crops. The cropping pattern followed is that of Multiple Cropping wherein

⁵ Source: Department of Agriculture, GoUK

Intercropping, Mixed cropping as well as Sequence Cropping are followed. Mixed cropping includes the cultivation of cereals such as Wheat, Rice (only in lowland irrigated areas), vegetables (cauliflower, tomato, potato, pea etc.) and pulses such as (soybean). The intercropping follows wheat and potato or pea and wheat while the sequence cropping is based on the weather conditions entirely. In some areas (villages like *Mona* and *Chapar*), people also grow millets like *Madua*, *Madera* and *Dhan* in the summers. Most of the villages near the road and having some communication facilities (like *Simayal*, *Mona*, *Chapar*, *Darim*) were more into cash cropping than the interior ones (*Kokilbana*, *Sunkiya*, *Harinagar* etc.)



Image: 6.1 Multiple cropping practiced near water source

Table: 6.1

Major Cash Crops and Food Crops Grown in the area	
Major Cash Crops	Major Food Crops
Peach	Madua
Apricot	Wheat
Plum	Tomato
Potato	Chilly
Cauliflower	
Peas	

Much of the cash crops were consumed for self-purpose. The acreage of the fruit crops was greater among the cash crops grown. This was a homogenous feature in agriculture irrespective of the villages covered.

Because of the same reason, the yield of the fruit crops was also greater than any other cash or food crops. With time, the type of crops as well as the cropping pattern has changed. Earlier the people used to grow traditional crops as millets, pulses and other coarse grains as madua, wheat, *Jhingora*(*Maandavi*), *Jowar*, *Bajra*, maize, black Soybean(*Kala Bhatt*) etc. Though they have not really abandoned growing these traditional crops but as in the words of villagers, **“Lagate to hain par kuchhota hi nahihai”**, the weather and especially the monsoons do not favor their crops.

6.1.2 Why Fruits?



Image: 6.2

Tara Devi of Village Bhiyalgaon:

**“Khet me kuchhota hi nahihai.... Falonkepedomeinmehnatkumhai...
fasalbhikhoob ho jaatihai”** [There (grows) no crops in the fields. In fruit trees,
less labor is needed and yield id also good.]

People of the region feel that growing fruits is less laborious and is a one-time investment. They also believe that the rate of returns is greater. Also as per *Trilochan Singh Tamta*, a resident of *Harinagar*, **fruits demand lesser water**.

6.2 ISSUES IN AGRICULTURE

During the study, various issues related to agriculture were discussed by the villagers. Agriculture, being the major source of livelihood to the majority, concerns every household who is dependent on agriculture and related activities. Certain issues are quite homogenous in the different villages while some others are very much meticulous to the specific village(s). Certain problems like that of lack of irrigation, fragmented landholdings and animal destruction etc. are very common in almost all the villages. Some of the important issues concerned with the agriculture/horticulture practiced in the area are as under:-

- ***Irrigation***

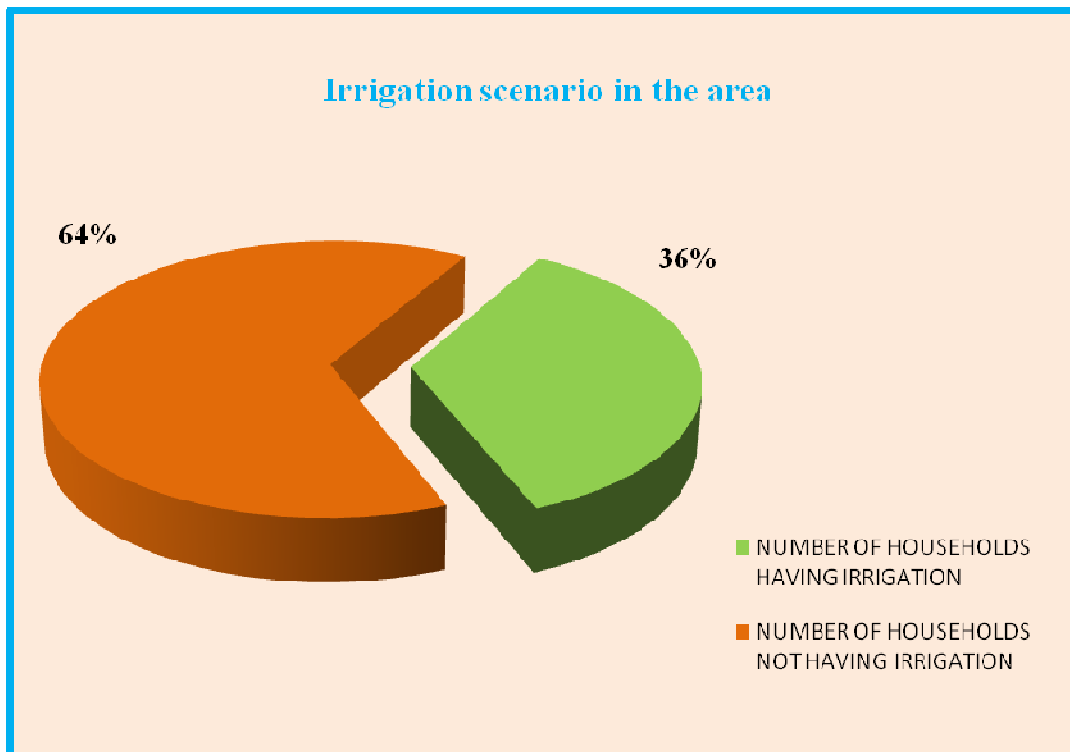
Lack of water for irrigation is a major problem in the area. Most of the farmers are depended on monsoon for crop cultivation. While most of the farmers don't have irrigation facilities and their decision related to sowing and cultivation of a crop is dependent on rain, the others have electric motors to pump up the water from the *gadheras*⁶ and *shrots*⁷ to their fields. Pumping water to the cultivated land is restricted to the villages which have a permanent source of water in the form of *gadheras* and *shrots*. Villages like *Lod*, *Dari*, and *Barait* which are situated near this kind of water sources had a permanent source of irrigation. So, in general, there exists no permanent source of irrigation. Location based disparity in the availability of irrigation was evident. Hence, the villages which are near to any kind of water source claim an advantage over the remotely situated villages in terms of water availability and road connectivity. There were evidences of use of electric motor for pumping water for irrigation through pipelines connected via wooden poles (just as in the case of electricity lines through poles)

⁶ Small river water stream

⁷ Underground water stream



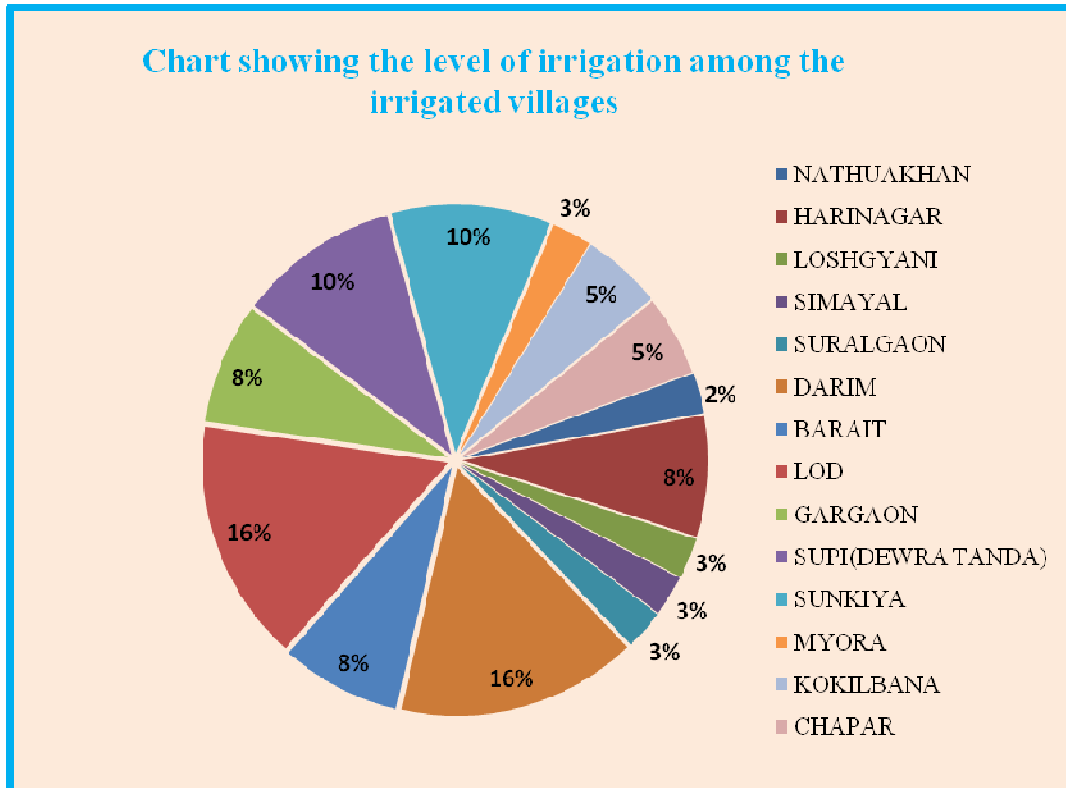
Image: 6.3 Swinging Pipelines carrying irrigation water from gadhera



Graph: 6.1



Image: 6.4 Due to lack of irrigation, yield of wheat have decreased drastically.



Graph: 6.2

- *Seeds, Pesticides And Fertilizers*

The villagers, though, had enough farmyard manure yet they were quite unsatisfied with the services of the block horticulture and agriculture department. In the words of Shri. *Bishan Singh Bisht* of village *Myora* “*Jab jarurathotihai tab ya to stock khatam ho jatahaiya fir doosridawaihoti hi nahi.*” As he further states that “*Pichlemahine hi aalookeliye DAP nahi mil payaaurfasal ko*”



Image: 6.5

nuksaan ho gaya” There were same kinds of reactions as far as the seeds are concerned. A major concern raised by Shri. **Trilochan Singh Tamta** of **Harinagar** village was that since the villagers of **Harinagar** were allotted the land as per the Grade 7 Ceilings Act and the ceiling is that of 22 Naalis, they do not get the required fertilizers and pesticides as their land is unregistered in the official records.

- **Forest Fires**



Forest Fires was a usual sight in the pine forest where the dry pine leaves serves as fuel to the fire. Because of these dry leaves, the fire becomes uncontrollable and spreads very fast. The forest fire does not only engulf the massive forests and the biodiversity in it but it also takes in agriculture and cultivable land as its prey. Therefore the people who consider

Image: 6.5

pine as **‘Kheti Ka Dushman’** or the **‘Farmers Foe’**

Digar Singh of Village Buribana:

“Pehleke time me madua, makka, bajra... lagatetha, lekinab log isse nil agate kyunki paani ki kaafidikkathai... zammenbhiapupjaonahirahi...”[Earlier, people used to grow Madua, makka and bajra. But due to problems related to water and loss of soil’s fertility, farmers don’t grow it now-a-days]

- **Fragmented Land/ Unconsolidated Land**

Fragmentation of land in the area is seen to be an issue by major population. Due to the land holdings being scattered and unconsolidated, the economy of scale for farming in these fragmented units of land is never reached. This way farm holding become

economically unviable, unprofitable and requires more labour to those who have patchy land.

- ***Climate Change***

Over the years, the climate of the local area gave changed drastically. This change has had adverse effect to farming. Untimely, scanty, erratic rains, hailstones and extreme temperature during summer have affected the yield of crops in the area. This year also, lack of rain was a worry to majority of farmers. Due to these conditions the crops including the fruit crop had to face great losses. As per *Shri. Kishansingh*, a *Loshgyan* based farmer “**Garmi me Aadoo(peach) is baarjaldipakgaya, jyadarasilabhinahiaaur size bhibohotchotahai**” i.e. “*This time due to extreme summer, peach crop had to suffer in terms of low yield, less juicy and smaller sized fruit*”

- ***Lack Of Labor***

There are many reasons due which have given rise to the increasing problem of labor insufficiency in the region. Some of them are migration to nearby towns and cities, increasing popularity of driving as a profession among the youth in the region, lack of interest towards farming among the new generation etc. Interestingly unlike the other parts of the country this region’s farming has not been really affected by the introduction of MNREGA.

6.2.1 Few Recommendations by Villagers

- ***Irrigation***

Villagers believe that irrigation is the most important problem in the region and that the government should do something about it. They criticize government for the faulty system and working of the concerned department. According to

Shri.Jiyalalsinghji of village *Darima*, “*Yahan par Gul to bohot bane hain par ek-do saal me wokharaab ho gaye*”⁸ i.e he blamed onto the concerned department saying that many constructions such as that of various *Guls*⁸ etc took place but they never lasted long and had a short life. They want the problem to be resolved on the part of the government itself and that it’s the very duty of the state government to provide its farmers with adequate input and support in order to continue agriculture.

- ***Seed, Pesticides and Fertilizers***

According to the villagers, the state horticulture department should come up with greater subsidy for the above stated agri-inputs. They demand timely supply of good quality planting material, pesticides as well as fertilizers for their crops. The government should also provide transportation facilities to the farmers.

- ***Forest Fires***

Forest fires are a major concern for the villagers who lose their cultivable or the cultivated land due to forest fires. As a solution villagers say that pine forest should be reduced and instead *Baanj, Devdaar, Kharik* and *Bhimal* trees should be grown which are not only soil binders but also provide as a food for the cattle. Apart from this the forest department should become more vigilant and responsible towards the forest fires which are very common yet the least cared and dealt.

- ***Fragmented /Unconsolidated Land***

The villagers understand the diseconomies of scale involved in the cultivating in fragmented land but they say that they live with it as it cannot be helped. The villagers also came up with solutions as ‘*chuckbandi*’ or **land consolidation** which has to be done by the government. The forest department, revenue department as well as the agriculture department should work in tandem in order to attain the goal of doing so. Especially the *Harinagar*, residents were in favor consolidation of land and then

⁸*Guls* are traditional and popular water harvesting and collection structures in hills

giving full property rights to the village people so that they can avail all the benefits of having one's own land and cultivating it.

- ***Climate Change***

Like 'every action has a reaction', villagers believe that climate change and the change of weather conditions against the agriculture definitely has to do with certain human actions which has made the 'mother nature angry at us'. *ShrimatiYashodadeviji* of the village *Sunkia* says that “*Yahan par mausampichlesaalaksamanyarehtatha, junekemahine me bhibaarishhotithi; par is baarbaarishhai hi nahi; shayadbhagwaankarmo ka fal de rahahai*”. The villagers do not really have any suggestions or recommendations about the resolution or control of changing climate which is posing threat to their agriculture.

6.3 LIVESTOCK: THEIR ROLE AND ALLIED ISSUES

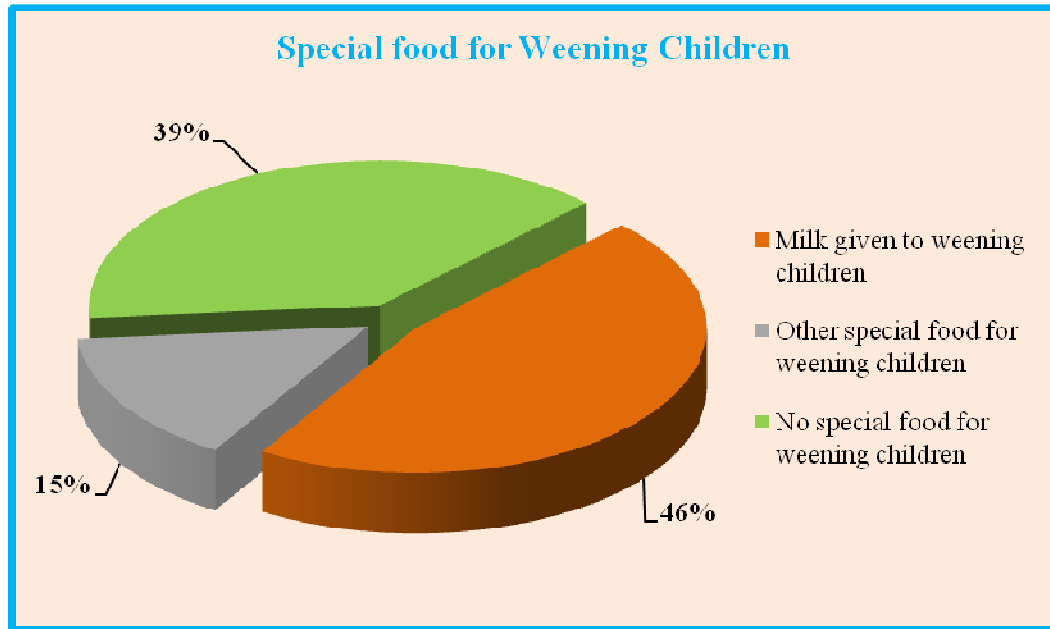
6.3.1 Situational Overview

Due to large number of problems in agriculture, development of alternative livelihoods in the region has started taking place, though all operate at small scale only. The most important amongst them is the livestock rearing and selling of milk. The falling productivity of agriculture and its inability to satisfy the needs of the family have led to farmers taking up cattle for commercial purposes.

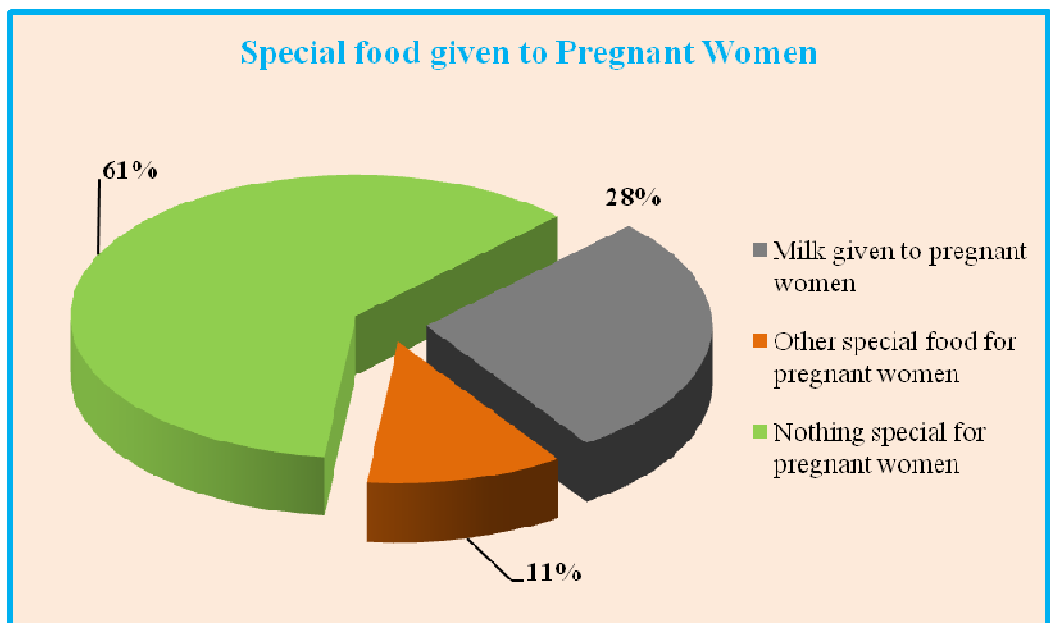


Image: 6.5 Cattle rearing in the Supi

From early times, milk and milk products have been a very important source of nutrition for the villagers. This is because of the availability of milk for self-consumption in the area. Milk is also the most important component of the special diet given to pregnant women and weaning kids. 46% of the children and nearly 28% of the pregnant woman in the region are fed milk to fulfill their nutritional needs.

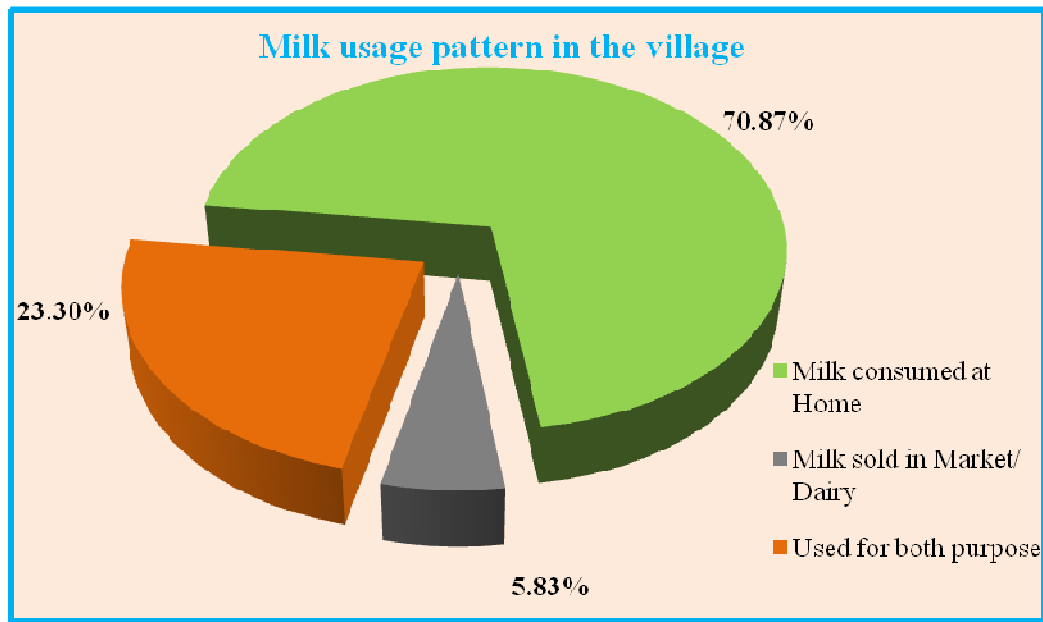


Graph: 6.3



Graph: 6.4

Historically, the villagers told us that selling of milk was considered a taboo in the village and cattle was for reared only for personnel use. Also, nearly all the families owned their own cattle; as a result the demand was small. However, now-a-days, due to establishment of dairy cooperative society in the area, the demand for milk has gone up and people have started rearing cattle for commercial purpose, though the number of such farmers is very small as is shown in the graph below.



Graph: 6.5

Another interesting fact was that agriculture was taken up as a secondary activity by all the families, the major reason for this was the low milk productivity of the cattle in the area. This was because most of the fodder supplied to the cattle was in form of dry grass and leaves leading to low productivity. The main source of fodder for the villagers is the green grass from the field, leaves from the forest and dry grass during summers. The grass was also sold to other village families not just for money but also in exchange of dung for manure and milk.

The biggest fodder problems arise in the months of May and June when no grass from the field was available and most of the leaves in the forest also dried. This was the time when many of the villagers had to buy fodder from the market.



Image: 6.6 Dairy Cooperative Society Kokilbana

Livestock was not only important as a source of milk but also provided much needed manure to the villagers. Many of the families said manure was the primary reason for rearing livestock; the manure was also sold amongst the villagers.

6.3.2 Issues in Cattle Rearing

The problems faced by the villagers with regards to cattle rearing are:

- Lack of proper support facilities by the government and cooperative society like facility for AI (Artificial Insemination), subsidized fodder etc.
- Some of the villages like Buribana, Kokilbana etc. which do not have a forest in their proximity have to face serious problems in collecting the fodder for the cattle.
- Most of the cow in the area are of indigenous variety, no high yielding hybrid variety cows available for the villagers
- Lack of water in the area, thus farmers have to carry water from far of sources for

the cattle to drink

- Difficult terrain and weather conditions in the area
- Low level of awareness amongst the villagers regarding the latest technology

Buribana village in the area was the best with regards to the dairy production in the area, it hosted the second largest dairy collection centre in the area and had a daily collection of about 300-400 lt. of milk collected every day. The rate paid to the villagers by the society was on the basis of the fat content of the milk. On the other hand some of the villages like Suralgaon, Simayal etc. had no facility for the sale of milk and hence, no livestock rearing for commercial purpose was done in the village. Thus, a need to setup more such centres in other areas should be done to provide an alternative livelihood to the people.

Mr. Mahesh Pandey of Sunkiya said “Apne peene ko paani nadi se ghode me rakh k late hain, 2 can ka Rs. 50 lagtahi gay k liyepanikahan se ayega.”

6.3.3 Some Recommendations

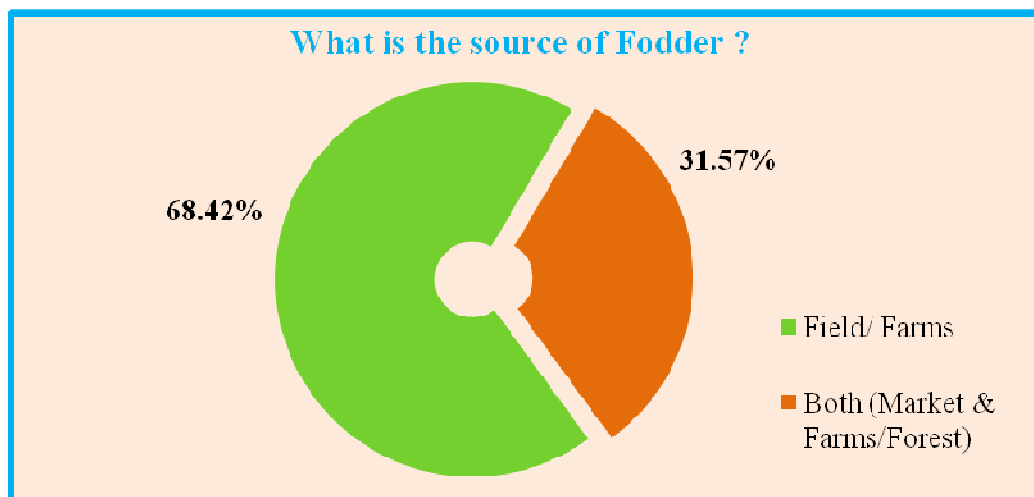
- Improved market for milk in the area, setting up milk collection centres in each village or in proximity of each village to improve
- More subsidies on the purchase of fodder etc. from the market, this can be provided from the dairy cooperative societies
- Provision of free Artificial Insemination(AI) facility in the village to ensure regular milk supply and breed improvements in the region
- Regular camps for the farmers to train them in the latest technology of livestock and cattle farming
- Providing farmers knowledge about the fat based pricing method used to determine the price of milk at the DCS

6.4 MARKET LINKAGE

6.4.1 Overview

Our area of study is popular for being a part of the fruit belt. Many fruits like plum, apricot, peach, pear, apple etc. are grown here depending on altitude, temperature, water availability and climate, though the quality and yield is a gamble dependent on monsoons. Selling of fruits and vegetable is a source of livelihood and in many cases, the only source of income. It was generally observed that the farmers in villages were predominantly marginal and small farmers. They produce small quantities of marketable surplus. Also, there was no local market and farmers have to travel distances to reach the nearest market of Haldwani. On a broader scale, all these farmers lacked any storage facility. Farmers also lacked market information and had to sell their produce at farm gate against deflated prices or were not able to sell their produce (which was left after grading) at all.

Apart from agricultural needs, people are dependent on market to purchase fodder for their livestock(s). It was found that nearly 32% of the households having one or more livestock(s) purchase their fodder from the market as well as from the field. This is in addition to remaining 68% who get fodder for their livestock from their farms or from forest areas. Also, it was seen that villagers purchase fodder and grass from each other depending on availability. This is due to the extra cost which they would incur if they purchase it from Haldwani market.



Graph: 6.6

Hence, it can be said that the farmers are dependent solely on market for getting necessary seeds, pesticides and other inputs and after the produce, they are dependent on agents who sell farmers produce by claiming exorbitant commissions.

6.4.2 Major Issues Associated with Market Linkage

There are numerous reasons for which a farmer is directly or indirectly linked to the market for needs associated with agricultural input (seeds, pesticides etc.) and output (produce, selling to market etc.)

- ***Issue of Land Registration***

Any land, which is less than 22 naali, is not registered in the villages located in hilly region. Hence, they are not provided necessary pesticides by the horticulture department. In lieu of this, farmers are forced to purchase pesticides and seeds from local market. This is further associated with lack of awareness about the quality, which results in purchase of pesticides and seeds available in the market.

- ***Limited Access to Market Knowledge***

Large quantity of the farmers produce is sold in the market of Haldwani. Also, there are famers S.H.G running in the area and they sell their produce in Delhi and Mumbai. When asked about any information about the prices, the farmers were unaware of the current market trends and were totally dependent on agents for any information. This shows the limited access to information on domestic and across border market and associated opportunities.

- ***Multiple Intermediaries and Exploitation by agents***

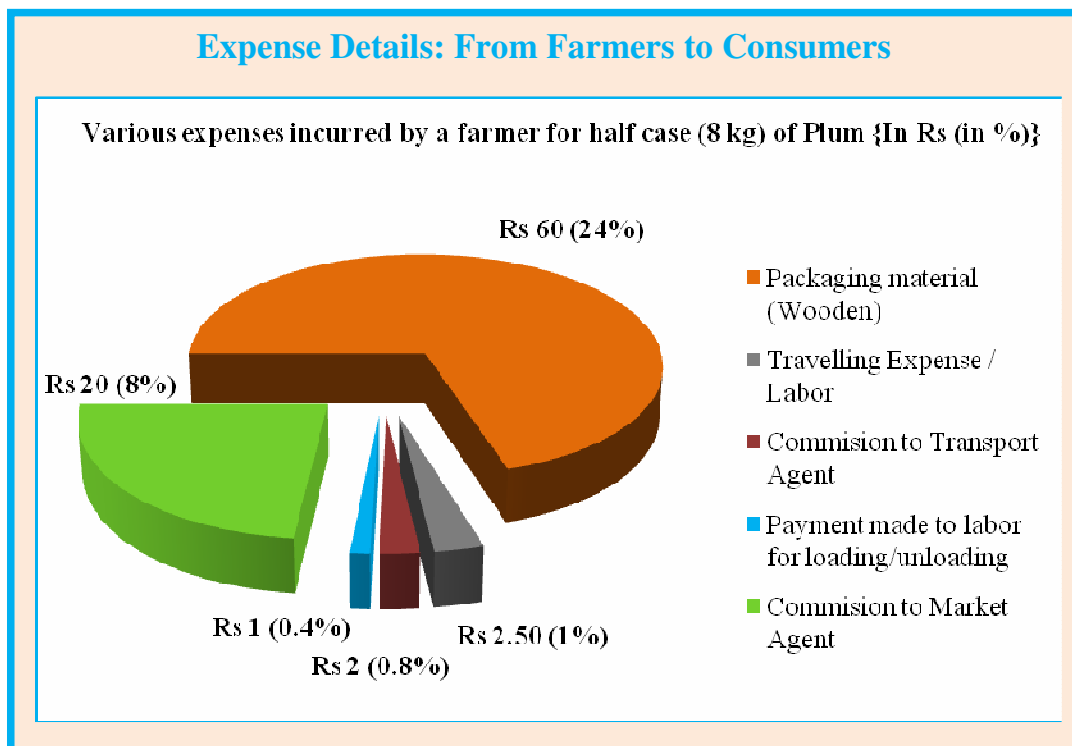
In all the villages, the farmers sell their produce to the commission agents situated in Haldwani Market. All are agents are known as traditional agents as this process of supplying produce to selected agents is the same since many years. These commissioning agents charge 8% per half case and 16% per full case of produce. From farmer to Haldwani Mandi, the transport agent bears the risk of all the produce and as a result charges approximately Rs 2 per half case and Rs 3 per case.



Image: 6.7 Agents and middlemen purchase produce from farmers at fixed prices and sell them at higher prices, getting higher share.

- ***Lack of Bargaining Power***

All the farmers in these areas are unorganized producers and hence, as a result have limited bargaining power. They only get the fixed price as decided by commissioning agent. After the purchase from farmer, the agent is free to sell the produce at any price.



- ***Dearth of storage facilities***

Very rightly, it can be said that the farmers earn for complete year during the peak season, which is from June to August. During these months, all the fruits are ready-to-sell and give them the return for the complete year. But this process is followed by high post-harvest losses and wastage. This can be stated by the fact that the farmers sell their highly graded produce in local market. But then due to lack of demand for lower grade fruits and lack of storage and cold chain, they end up losing some percentage of their produce.

- ***Dilemma of Grading***

Due to an initiative of Chirag⁹, the farmers were linked with Mother Dairy. As a result of this, Mother Dairy paid the farmers according to the market rates of Delhi. But, they purchased only A-graded¹⁰ produce. This is an advantage in terms of higher income to the farmers who could harvest A-graded produce.



Image: 6.8: Mother Dairy has started purchasing from the village but takes only A-graded produce as per their requirement

But the quantity of produce to be purchased is decided by Mother Dairy and as a results, it results in a loss to the rest of the farmers who invest much to get higher

⁹ Chirag, Central Himalayan Rural Action Group is a N.G.O working in these regions with farmers to by-pass the ladder of transportation and commissioning agents.

¹⁰ The process of grading is based on the size and color of the fruits. Usually, it is graded visually by looking at the size and color of respective fruits.

quality produce but could not sell it at good prices. Finally, they end up selling the same produce in Haldwani mandi at lesser prices.

6.4.3 Recommendations to Improve Farmer to Market Channel

As mentioned, there are many problems due to which farmers are not able to improve their conditions and continue to get exploited by middlemen and agents. To overcome all the existing barriers, following are some of the recommendations which can improve the prevalent situations in these areas.

- ***Replicating the Himachal's initiative***

The major issue due to lack of proper connectivity in the area is not getting any updates about current prices in the market. Due to this, farmers can do nothing about the prices at which their produce is sold further to suppliers or customers. This results in huge amount going to agent's pocket. To overcome this, H.P government has appointed few officers who will surprise-check the prices in local mandi to ensure, the farmers are paid sufficient share and middlemen are not able to exploit them. These officers/members are appointed by the famers from Mandi Committee only. This seems to be a very viable option to provide maximum return to the farmers.

A suggestion by Daleep Singh Bisht of Village Buribana:

"We can nominate a village representative who can track the prices of sale of various crops and what is paid to the farmers in return."

- ***Diversification into higher value crops***

Rarely, farmers calculated or even knew the return on the crops/ fruits they grow. Hence the diversification into higher value crops can be adopted for getting better returns.

- ***Encouraging private investment***

Keeping in view the huge potential of this area in terms of business, private companies can be encouraged to invest in development of marketing infrastructure, supply chain and grading facilities.

- ***Development of storage and cold chain***

Every year, huge quantity of farmers produce go wasted due to lack of demand, storage facility and Special focus must be given to development of storage facilities and cold chain supply in these areas.

- ***Setting up a Processing plant***

Many farmers recommended a processing plant in the area, which can be very beneficial to every farmer. The processing plant can purchase B-graded and C-graded produce and after some value-addition, many different products like jam, drinks etc. can be manufactured. The dual benefits derived can be as shown in the diagram:

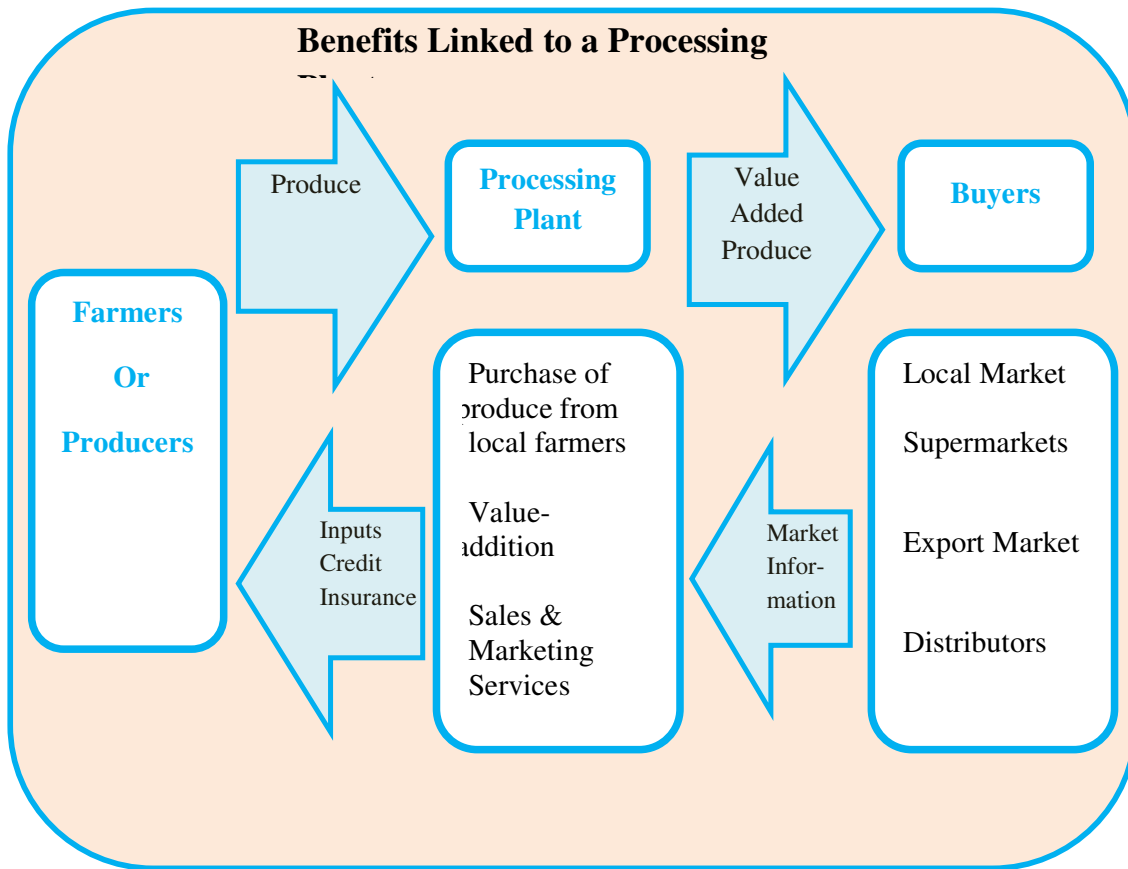


Figure: 6.1 Processing plant has been a suggestion by everyone in the area and it is

believed it will serve both the purpose of employment & additional income

▪ ***Concept of contract farming***

Contract farming can also be initiated by forwarding a trade agreement between the producer and buyer. The buyer can be a processor, supplier or an exporter. In this way, the production risks and price risks can be mitigated. The producer can commit to supply pre-decided quantities and quality whereas the buyer can commit to purchase the produce at pre-agreed price. Generally, it is the responsibility, though not mandatory, to provide necessary inputs, credit and insurance cover to the farmer/producer. **This will help the producer to cut the production cost in terms of time, transport of inputs and produce.**

▪ ***From Spot/Cash Market to Vertical Coordination***

The risk which is associated with farming can be mitigated by vertical coordination of whole process. The process of vertical coordination results in achieving increased efficiency, reducing transactions costs and reducing price risk. It reduces the uncertainty for the farmer and provides a more stable income while allowing the farmer to maintain ownership of the business. This model has potential for application in different crop sectors.

▪ ***Policy Reformation***

Government has a significant role to play, in terms of policy directions. There is a need to:-

- Promote supply chain infrastructure,
- Expand food processing facilities,
- Promote grading, standardization and quality certification of farm produce,
- Ensure farmers linkage with main market, by eliminating the middlemen and various agents and,
- Provide facilities for storage, transportation, domestic marketing and export.

7.1 BIODIVERSITY

7.1.1 Present Scenario

From the early times the villagers of this region have been dependent on the forest for diverse kinds of fruits, vegetables etc. The forests were a source of food to a large part of the population especially during the rainy season. Along with forests, the villagers also got some green vegetables from the rivers, *gadhera* and other local water sources. The major vegetables available in the wild area are mushrooms, *bhirol*, *lingure*, *bhicchu ghaas*, *garlai* etc. Also, some varieties of fruits like *kafal*, *hisalu* etc. are also found which are used both for personnel as well as commercial purpose and are thus very important for the villagers.

In spite of all this, these days the villagers have reduced the use of wild food as a part of their diet. Very small number of them collect vegetables from the forest; the fruits too are mainly used for the purpose of sale in the market as they fetch a very high price in the Nainital market. There are two main reasons for the decrease in the collection of wild foods by the villagers:

- ***Decreased traditional knowledge amongst the villagers***

Many of the villagers suggested that they do not have any knowledge about the wild foods like mushrooms etc. and hence do not use them for consumption as some of them are poisonous. They said that their parents knew about the edible food and could distinguish them from poisonous ones. The lack of the same expertise prevents them from collecting the wild foods from the forest.

In the words of MrDewan Singh from Suralgaun “*abhamepata hi nahichaltakyakhane ka haikyanahi to jungle se lane ka kyafayda?*”

- ***Decrease in the production of wild food products in the forest***

There has been a decrease in the production of wild food in the area due to the climatic change taking place in the area. Due to delay in rainfall and decreasing levels of water in the sources, the green vegetables have either stopped growing in the source or the quantity is so small that it does not satisfy the need of the family.

Another fact that came to the fore during the survey was that most of the collection of fruits and vegetables now days is done for sale in the market rather than for self-consumption. This gives an indication of the changing mentality of the villagers of the area and also the commercialization of products which were used for self-consumption earlier. Fruits like *kafal*, *hisalu* etc. fetch a high price in the nearby markets of Bhowali and Nainital, similarly the vegetables like *lingure*, mushrooms etc. are also now sold in the market at very high prices. Thus, the villagers prefer to sell these crops in the market rather than use them for self-consumption.

All these reasons have led to reduced consumption of wild fruits and vegetables in the area, leading to shrinkage in the food basket of the villagers who are now more dependent on market and government than ever before for their food security and health.

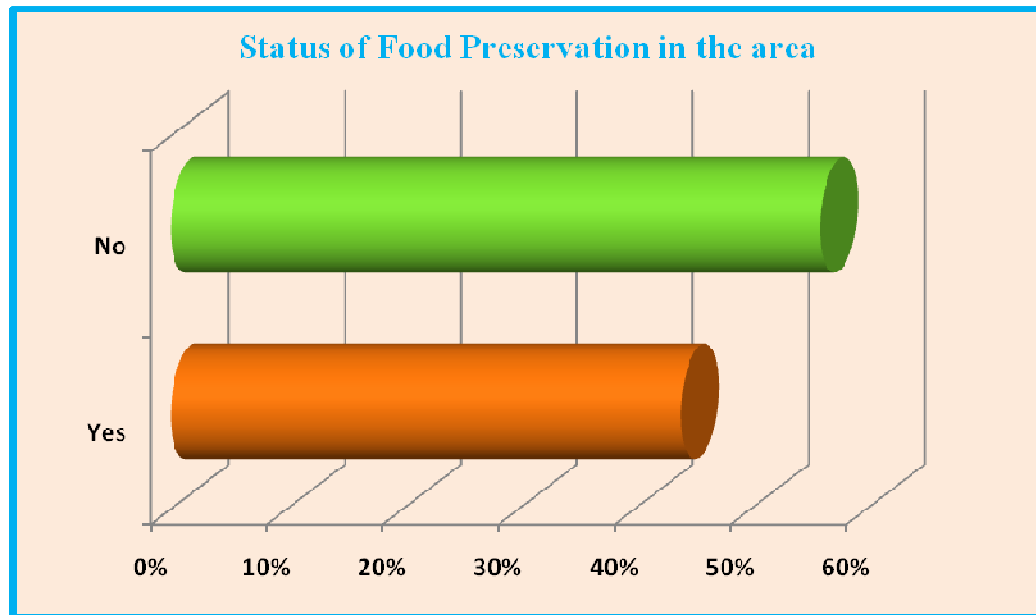


Image: 7.1Apricots Drying on the Roof of a House

Food preservation and storing for times of scarcity has been an age old practice to help satisfy their food needs throughout the year the villagers. Fruits and vegetables

are dried and stored for times when little or no vegetable and fruits is available in the fields. Other methods of storage include making *badi*, *mungori*, *jams*, *chutneys*, *jellies* etc.

However, now a days, the number of families preserving the food has been steadily decreasing. The primary reason for this is the availability of nearly all the products in the market round the year. Also, since most of the crops grown in the fields are cash crops, very little is left with the farmers after sale in the market. As can be seen from the graph below, only 44% of the families preserve food to be used in the later seasons.



Graph: 7.1

The duration of food preserved varies with the method of preservation. Some of the products like *badi*, *mungori* etc. last for a full year and can be used all year round, other ones like dried fruits, vegetables etc. last one season, i.e., 3-5 months.

Deepa Devi from Lodh said “Aajkalhamarekhaneke lie samaannahi ho pata, sukhane ka to sawaal hi nahiuthta, haan jab zyada ho jatahai to sukhaletehainthodasa.”

7.1.2 Recommendations

- Making farmers aware of the various preservation methods that can be used to improve the life of the products
- Teaching them value addition methods by which they can reap high revenues even from the food crops so as to make them go back to the plantation of the food crops
- Educating villagers about the wild products in the forests and how they can be used as a part of their food or as a source of income for them
- Instilling a sense of ownership towards the forests amongst the villagers so that they try to protect and take better care of it that would help to diversify the range of products in the forest

8.1 ROLE OF LOCAL MARKET

8.1.1 Situational Overview

Uttarakhand is a mountainous state and all the villages where we conducted our study are located on hills. For any household who does not get sufficient produce from his field by agriculture, P.D.S and market play a very crucial role in providing the necessary food material. Generally speaking, in every village, one or more shops of different items can be easily located. For e.g. there is a main market present in Nathuakhan which serves the villagers of Harinagar, Loshgyani, Suralgaon and Paiyakholi etc. whereas the market located in Mona provides necessary items to Mona and Chapar. Similarly, a main market is located in a particular village which is more convenient to nearby villages also. These markets provide an easily accessible option to villagers who find it hard to commute to far-away main market located in Haldwani. These local markets serve as a convenient platform to all villagers and provide resources, food and necessary things of use.

These villages have very tough geographical terrain and commutation is very time consuming and costly. The local market is of key importance in villages which are located far-away from roads and people have to travel kilometers on foot to purchase necessary and daily used products. One interesting fact about the presence of these local markets is that it saves a lot of cost to the buyer which otherwise would be incurred on transport and going to & from the nearest main market, Haldwani.

8.1.2 Local Market: Its need and role

There are various reasons because of which the people go to local markets:

- ***Close substitute of P.D.S shops***

P.D.S provides wheat, rice and sugar and sometimes kerosene oil also at highly subsidized rates, but generally, all this lasts for 10-20 days on an average. There is a huge variation in terms of the number of days for which P.D.S food lasts as it depends on the average household size and their daily consumption. So, all these households are dependent on the market, be it local one or one located at Haldwani, to get necessary food for the rest of the month.



Image: 8.1 Local Market is of significant importance to poor and daily wage earners

- ***Purchase made on daily basis***

Many of the villagers who don't have much land work as laborers. Usually, they are paid either on daily basis or weekly basis. So, these local markets serve a big deal to these workers who don't have much liquid cash every day. Hence, they buy necessary things on daily basis from these markets only.

- ***Economical substitute of cultivated crops***

Apart from this, many people do not grow all vegetables during all seasons and hence they buy these vegetables from these places. Further, it can be stated that villagers rarely have storage facility to keep their food material fresh and hygienic.

Pushpaof Village Gargaon:

“kheto me paidawaarkum ho gayihai... jab bhikumpadtahaiwo bazaar se khareedletehai....” [The yield (of crops) has decreased. Whenever there is any shortfall, (We) purchase from the market.]

Also, there were instances when people would find the price of the same crops available in market to be cheaper than the price they get after selling their produce to agents or in market. Hence, the farmers sell all their produce and then find it more profitable to purchase the vegetables/fruits from the market. Though it may sound surprising, but after some more research, it was found that the agents sell their produce in markets located in Delhi, Haldwani and in turn sell cheaper produce in the local markets which local farmers buy.

- ***A boon to farmers***

Normally, farmers get pesticides from horticulture department. But there are times when the farmers are not able to get necessary pesticides, seeds etc. on time, so they purchase all these from nearby market only. As time plays a vital role in agriculture, so these markets serve as a perfect substitute to avoid any delay in getting pesticides, seeds and other necessary items.

- ***Significant support to marginal farmers***

In all these villages surveyed, land has been allocated to the people since decades. With time, majority of the households have distributed land among family members, brothers and sons. As a result of continuous division, the land has become marginalized and fragmented. This has resulted in too less of land for cultivating crops and vegetables suitable for the whole family. Hence, all these marginal farmers have no other option but to purchase from these markets.



Image: 8.2 Local Mandi of Nathuakhan

The local market at Reetha, Nathuakhan, Chapar etc. all play a considerable potential role in fulfilling the various needs and requirements of the various villagers. Elders (usually) and children (sometimes), visit these markets to purchase biscuits, eggs, maggi etc. Various FMCG products which are suited to rural markets (e.g. small pouch with lesser quantity of oil, maggi, shampoo, soap etc.) are easily available in the market. These lesser quantity is somewhat more affordable and the transactions at these local markets are limited to low level only. The local market helps both the small and large scale farmers in terms of being more convenient. Knowing the fact that villagers don't have much storage facilities, these local markets serve a key role. At these places where transportation is a very basic problem, these shops provides excellent facilities and saves a lot for a villager in terms of time, labor and money. Hence, it can be said that market serves an indispensable role in supporting the food requirements of the villagers. It provides them all food and related day-to-day used products.

The purchase from market is more common among A.P.L families as the quantity of food they get from P.D.S is insufficient and does not lasts for a month. Hence, it can be said that the purchase of wheat and rice is more common among A.P.L families as compared to B.P.L families. But, the purchase of maggi and biscuit is low involvement purchase and people buy these whenever their kids demand or when they have some money to afford these items.

Following are some of the key reasons that the purchase of various items is made on daily or once in two-three days from local market by various households:

- People don't have much liquid cash in hand.
- They are daily wage earners, so there income varies at daily basis.
- These households are located nearby to market areas, so they find it more convenient to send their children or make purchase themselves on daily basis.
- Lack of storage facilities is another factor which drives daily purchase from local market.

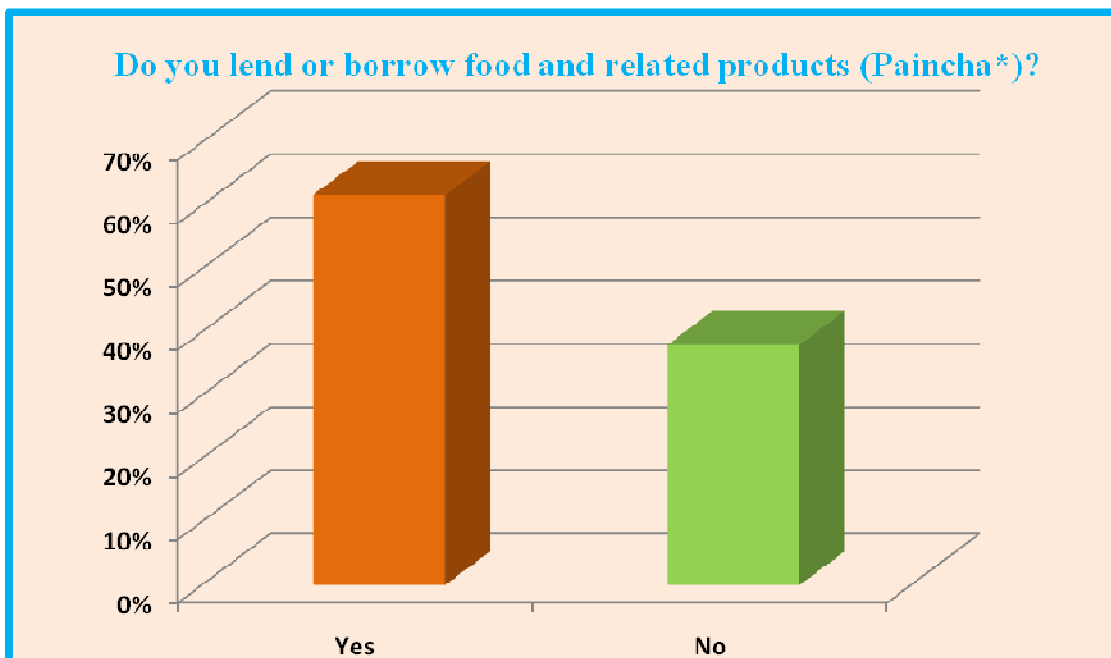
On the other side, there exist households who purchase wheat, rice, masalas, oil etc. from Haldwani main market. Generally, this purchase is made on monthly to quarterly basis. On further discussion, it was found that it costs Rs 200 to visit Haldwani

market, so villagers prefer to make bulk purchase so as to save money spent while commuting. This bulk purchase is mostly made by families who have A.P.L card. As mentioned, transportation and commuting expense is a key barrier in regular visit to Haldwani, people are seen to be reluctant to visit the market frequently.

8.2 SOCIAL SUPPORT AND ROLE OF COMMUNITY

The need for social support multiplies manifold, when people are located at a place from where it's not easy to commute, markets are not easily accessible and agriculture is primarily dependent on monsoon on a broader scale.

The practice of exchange of food and other resources during time of shortage or necessity can be easily seen in India. This process of exchange, which involves both, lending and borrowing, of food grains and other eating food items, is known as Paicha in local language among villagers. This lending and borrowing of food to and from others was included in our study, as the society has a significant role in assuring food security to others.



Graph: 8.1

Usually, this paicha occurs either in the form of cash or in kind or in terms of exchange of same type of food and related product(s).

In our study, 68% of the households studied said that they have either lent or borrowed food in last one year. On further discussion with these 68% households, it was found that the exchange takes place usually for a single day's diet. No one has ever borrowed or lent anything for a longer duration. Also, this practice was more common among families and households living close to each other. In villages like Nathuwakhan, Loshgyani, Darim, Supi, Kokilbana etc. more than 95% of the households agreed to have been involved in the process of paicha.

Also, it was seen that this practice is more common among households in which food items purchased from P.D.S lasts for 10-15 days of the month. Another reason could be untimely delivery of items at P.D.S shops. These households considered this practice to be more common in people belonging to similar caste. Since as a part of division of land and property between family members (say, brothers) is common in these areas, so people find it best to exchange resources with them only.

The exchange in these villages happens as per the requirement. One of the most interesting facts is that all the lending and borrowing has happened in exchange of same item and same quantity, which is measured by the type and size of utensil(s) in which this exchange occurs.

On the contrary, remaining 32% of the households who said they were not involved in any exchange are residents of the villages where houses were located far away from each other or which lie in proximity to markets. Villages like Suralgaon, Barait etc. are the example of few villages where paicha does not take place.

A striking inference which could be drawn from the study is that in these villages, P.D.S items last for approximately 22-25 days. It might be due to this reason that paicha is rarely seen and households are self-dependent in terms of food security.

9.1 INTEGRATED CHILD DEVELOPMENT SERVICE

(ICDS) SCHEME

9.1.1 Brief Overview

The Integrated Child Development Services (ICDS) Scheme, launched on 2nd October, 1975. It is a programme to tackle the widespread problem of malnutrition, impaired development, morbidity and mortality among the young children. It not only responds to the needs and problems of children below 6 years of age but also of adolescent girls, pregnant women, lactating women and other women (15-45 years)¹¹.

9.1.2 Objectives of the scheme

The main objectives of the ICDS are:

- To improve the nutritional and health status of children below the age of six years;
- To lay the foundation for proper psychological, physical and social development of the child;
- To reduce the incidence of mortality, morbidity and malnutrition and school dropout;
- To achieve effective coordination of the policy and implementation among various Departments to promote child development; and
- To enhance the capability of the mother to look after normal health and nutritional needs of the child through proper nutrition and health education

9.1.3 ICDS Services

Towards achieving the above objectives, a package of integrated services comprising Supplementary Nutrition, Immunization, Health Check-up, Referral Services, Nutrition and Health Education and Non-formal Education is provided in a comprehensive and cost effective manner to meet the multi-dimensional

¹¹ Source: www.icds.gov.in

and interrelated needs of children. Aanganwadi Centre is the focal point for delivery of services. Immunization and health-checkup are provided at the Aanganwadi through the network of health services in the project area. The beneficiaries and services under the ICDS Scheme are given in table.

Services	Beneficiaries	Services rendered by
i) Supplementary Nutrition	Children (6 months to 72 months); Pregnant and Lactating mothers.	Aanganwadi Worker and Helper
ii) Immunization *	Children below 6 years; Pregnant and Lactating mothers. -do-	ANM/MO
iii) Health Check-up*	-do-	ANM/MO/AWW
iv) Referral Services	Children in the age group of 3-6 years	AWW
v) Pre-School Education	Women in age group of 15-45 Years	AWW/ANM/MO
vi) Nutrition & Health Education		

9.1.4 ICDS Scheme in Villages Surveyed

Almost all the villagers were aware about the scheme, yet they were not fully aware of the various provisions and entitlements of the scheme. About 85% of villagers send their children to the Aanganwadi. Every village had its own Aanganwadi and most of them were centrally located except a few of them where the children used to travel a long way to reach the respective Aanganwadi

9.1.5 Villagers Perception about Aanganwadi

The awareness level of the villagers was limited to the various services rendered by the regional Aanganwadi. Almost all of them were aware about the food served at

these Aanganwadi, the supplementary nutrition given to the pregnant and lactating mothers and also about the non-formal, health education imparted to the children. Some of them were even aware of the immunization and health check-up services provided by these centres, but this situation was present only in the areas where the Aanganwadi worked seriously and efficiently. The quantity according to the parents was good in most cases and they also did not have any problems regarding the quantity received by their wards. The above stated situation was true for most of the villages except for the village where the responses were quite cold for the functioning and the quality of food in the village Aanganwadi centre. Most of the villagers had never witnessed the kind of food served and the way it is prepared in these centres.

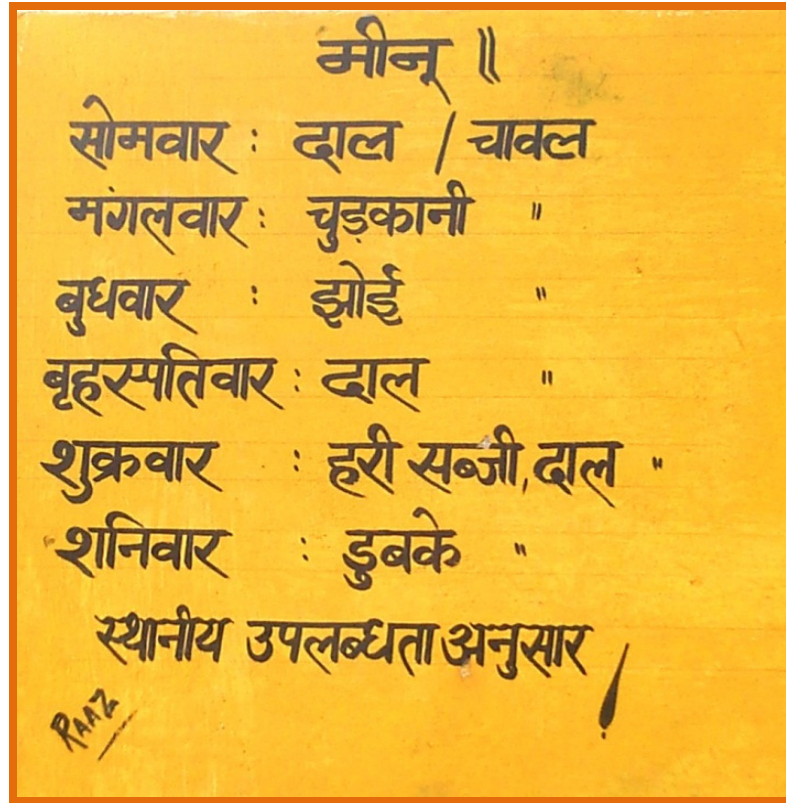
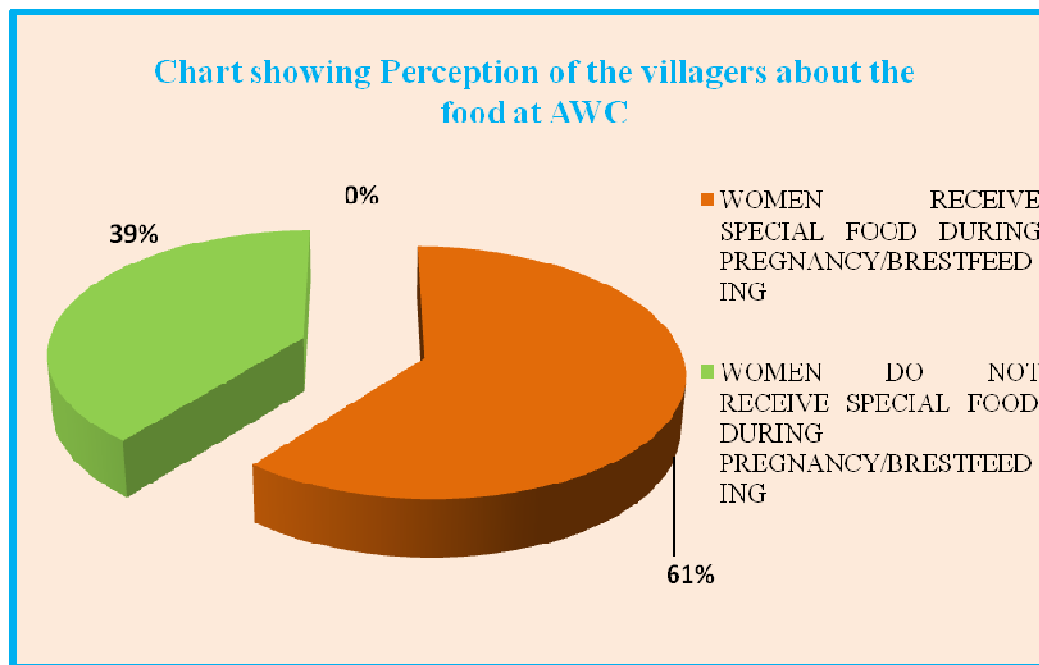


Image: 9.1: Menu of meals served at AWC & Primary School

Despite the fact that the children used to have their 'complete diet' at the Aanganwadi, most of them generally used to have food after returning from the school. The situation was a little different in the NAanganwadi where there were children who use to carry their own food as they did not like the food served at the Aanganwadi. Most of the Aanganwadi claimed of serving a variety of food items but

the children told that the food was almost the same i.e.rice-*daal* round the year. Most of them served fruits like banana, orange, guava to the children along with the routine meal of rice and *daal*. On talking to the children as well as their parents it was found that health check-ups were seldom in the Aanganwadi while immunization facilities were also very rare except in the Aanganwadi of *N, Mauna* (in collaboration with the PHC centre of the village) and *Chapar*. Therefore as an observation it was found that those Aanganwadi which were accessible and near to the road and also those located in the village where a Primary Health Centre was would carry out both the health check-ups as well as immunizations at times.



Graph: 9.1

The women along with the other members of the family knew very well about the food items which are provided under the supplementary food items received from the Aanganwadi. Most of them either knew or had received a kilogram of whole wheat porridge from the Aanganwadi centre. The pregnant ladies did receive iron and folic acid capsules from the ANM. But interestingly, the adolescent girls and young women of age 15 to 45 years did not get supplements and even if they did, it was irregular. Monthly health check-ups of these women and girls were not very common except in a few areas like *Mauna*. The quality of the supplementary nutrition provided under this

scheme was average at present as per the women. According to them, unlike in the earlier years when mixed grain, sugar added porridge was provided; the quality of the porridge has deteriorated over time. Earlier the porridge was more nutritious, easily preparable and tastier than what is received these days from the Aanganwadi



Image: 9.2

9.1.6 Issues Related to Aanganwadi

- Most of the villagers were concerned of the fact that Aanganwadi are situated in remote areas with a difficult terrain to walk through that is why even if the children are registered, their parents do not send them to the Aanganwadi because of the reason aforesaid. They too have a problem taking their children to Aanganwadi as they say they get busy with their daily household chores
- Most of the Aanganwadi are run in the premises of the primary schools of the region, where there is already a scanty space for the classes to run, let alone the playground and recreation facility for the children. Most of the Aanganwadi also do not have a separate space for preparing food or it is the same room where the Mid –Day-Meal is prepared

- The drinking water was available for the children from the nearby *Naulas, Shrots, Gadheras* or hand pumps. Therefore safe drinking water was available for the children
- Decent sanitation facilities were available in the Aanganwadi, which in the case where the same building was shared by the primary school and Aanganwadi, was common for them
- Very few of the Aanganwadi had the weighing and height measurement equipment such as weighing balances. But the easily available measuring tapes were present in most cases
- Problem of cooking gas: cooking gas is not that easily available to the Aanganwadi like any other household as there is no proper timings of the gas arrival and refill

9.1.7 Recommendations of the Villagers

- Since most of the villagers were quite satisfied with the availability and quality of food and the others services under the ICDS scheme, they had only issues with the variety of food served under the scheme
- More nutritious food such as nutritious porridge, more ghee, butter, fruits, and variety of vegetables should be served at the AWCs
- More nutritious food should be given to the pregnant ladies for the home and it should be such that no more ingredients should be added to it
- Proper drinking water facilities should be provided to the children
- An interesting thing here is that the villagers have no problems with the AWCs running under the premises of the Primary schools. That is because they say that it resolves the problem of carrying their young children to AWCs which are isolated and remotely situated. The elder siblings take the younger ones with themselves to the primary school

9.1.8 General Recommendations

- There should be proper audit and inspection of the AWCs situated not only at the roadside but also in the interiors of the remote villages

- The AWCs should be properly staffed with at least 5 staff workers including a cook, 2 teachers (at least), 2 helpers and a medical practitioner
- The AWCs should have proper working medical instruments for the medical check-up of the children
- The AWC personnel should be made permanent in their jobs and given pay hike so that they are retained in their jobs
- The government should ensure required ration at the AWC for which it can have a village resource centre (for ration, medical kits etc.)
- Proper and frequent medical check-ups along with immunization programme should run under the inspection of the medical practitioner
- The pregnant women should be given more quantities of nutritious whole grain porridge throughout the pregnancy as well as lactation period

9.2 MID DAY MEAL (MDM) SCHEME

9.2.1 Introduction

The Midday Meal Scheme is the popular name for school meal programme in India which started in the 1960s. It involves provision of lunch free of cost to school-children on all working days. The key objectives of the programme are: Protecting children from classroom hunger, Increasing school enrolment and attendance, improved socialization among children belonging to all castes, addressing malnutrition and social empowerment through provision of employment to women¹².

9.2.2 MDM Scheme in Villages Surveyed

Most of the children in the area go to the nearest primary school. These days almost every village has its own primary school. Talking to the people it became clear that Midday meal has really been able to attract the children to school. The parents send their children so that they have enough food in the school. There is hardly any concern about studies. Some of the villagers, although, say that the earlier system

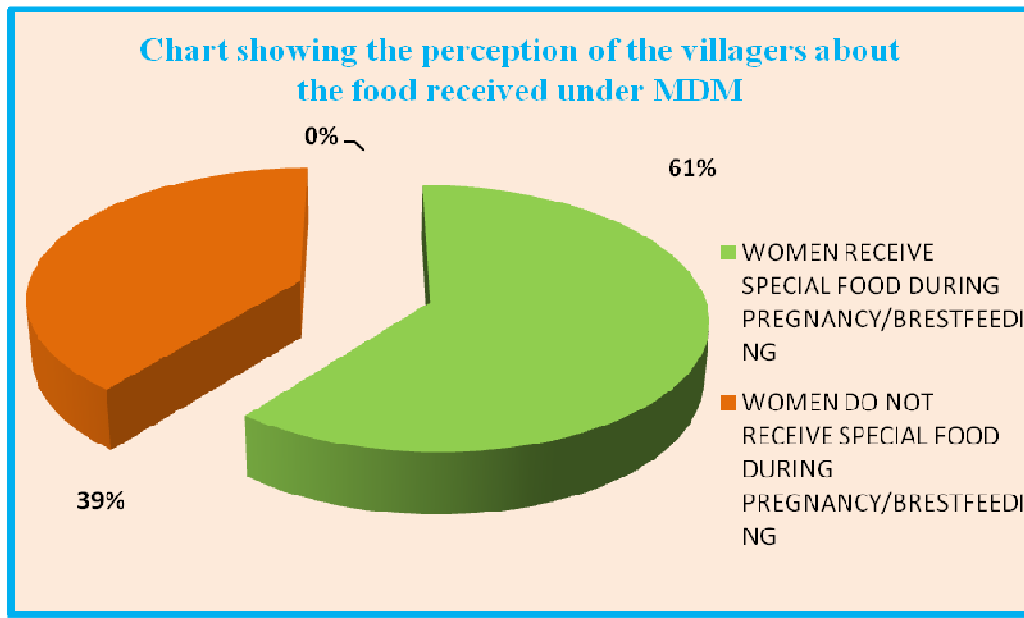
¹² Source: <http://mdm.nic.in>

wherein the children were given monthly ration for their home was better than the present system of feeding children in the school itself. A visit to one of the primary school at *Darim* revealed that the primary school at *Darim* was adjudged as the best school in terms of deliverance of Midday meal scheme in the entire block last year. The school had the entire menu displayed and it was religiously followed. Local cuisines were served to the children in the school and sometimes fruit were also distributed to the children.



Image: 9.3

Talking to the people of the village, it was revealed that there were no apparent problems with the quality or the quantity of food served to the children, though none of the parents interviewed went to see the food served to their children in the school. According to the primary and junior school children, there was no such caste discrimination while serving the food and the teachers too used to have certain amount of food for themselves.



Graph: 9.2

As a contrast to the school at *Darim*, the primary school at Nathuakhan was a complete ‘mismanaged’ as per the Nathuakhan villagers. There in the school no such food variety was served and there was a routine of the same *daal-rice* which was followed. The food was tasteless and children did not like. Most of them carried their own food and water to school or they had it after coming back from school at about 04:00 PM in the evening. The rice served was also not of a good quality and many a times it had pebbles and pests in it which made it unpalatable to eat.



Image: 9.4

Certain problems as unhygienic food preparation, lack of proper drinking water facility, tasteless and unpalatable cooked food are common in many villages in the area. Certain other issues as the insufficient food are less common in the villages. In the opinion of one of the primary school teacher cum Headmistress *ShrimatiRejinaRikhi*, ***“The whole purpose of introducing MDM gets diluted with the system of cooking food within the school premises which is very time consuming and distracting for the children and their studies”***. She further adds that ***“The cook (bhojanmata) does not really look after her duties very well, in fact, their pay salaries have been increased by the government and now they are demanding permanent job as a government employee”***. This will empower them with the authority to execute their own will no matter what the other staff and the children think of the food or her work”

The state government has allotted a daily Rs 8.5 ration for the children’s food at MDM. The ration is never utilized for the purpose it comes. Either it is more than what is required or it never covers the cost of food

9.3 PUBLIC DISTRIBUTION SYSTEM(PDS)

9.3.1Overview

The public distribution system (PDS) and Fair Price Shops (FPS) are the most important cog in the wheel for the government trying to ensure food security for the people. Nobel Laureate Prof. Amartya Sen, comparing food production and poverty in Africa and India, lavished praise on the Indian Public Distribution System, stating that markets, by themselves, cannot address questions of poverty and starvation, and in response India had built the largest, though not necessarily the strongest, PDS in the world. The importance of the system can easily be seen the importance of the system in the lives of the village in the area. The villagers are very heavily dependent on the FPS for satisfaction of their requirements of basic foods and grains.

In terms of both coverage and public expenditure, PDS is considered to be the most important food security network. However, the food grains supplied by the ration shops are not enough to meet the consumption needs of the poor or are of inferior quality. The average level of consumption of PDS grains in India is only 1 kg per

person / month. The PDS has been criticized for its urban bias and its failure to serve the poorer sections of the population effectively. The targeted PDS is costly and gives rise to much corruption in the process of extricating the poor from those who are less needy. Today, India has the largest stock of grain in the world besides China, the government spends Rs. 750 billion (\$13.6 billion) per year, almost 1 % of GDP, yet 21% remain undernourished.

Table: 9.1 Details of quantity and rate of items available at P.D.S shop to different card holders

Type of Family	APL		BPL		AAY	
	Quantity (kg)	Rate (Rs)	Quantity (kg)	Rate (Rs)	Quantity (kg)	Rate (Rs)
Wheat	10	10	10	5.5	25	2
Rice	2	20	20	7	10	3
Sugar	400g*	14	400g*	14	400g*	14
Kerosene	2 Litre	18	2 Litre	18	2 Litre	18

* Quantity per member of the family

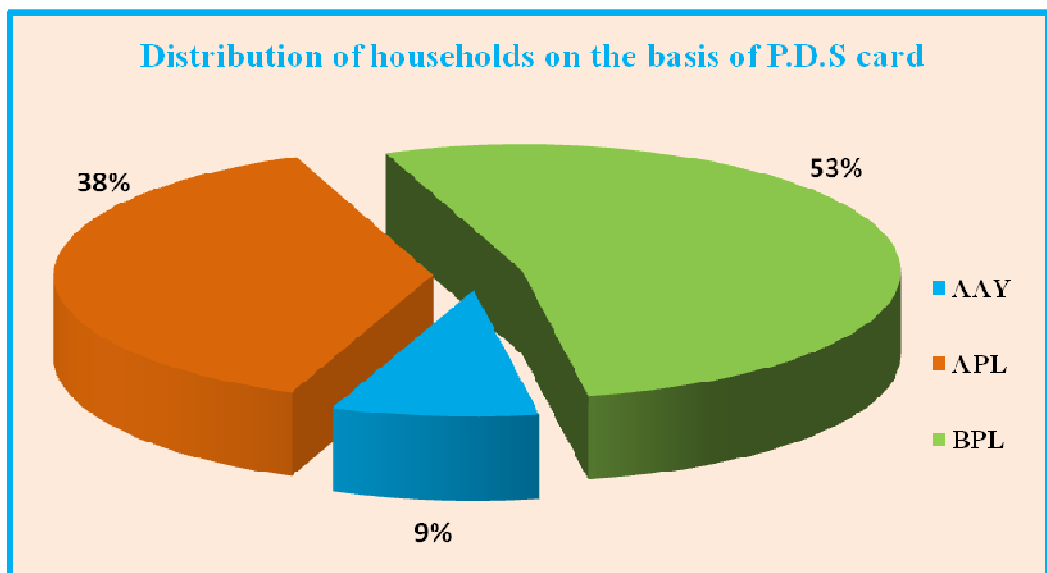
9.3.2 PDS in Villages Surveyed

In spite of all the advantages it offers, it cannot be considered to free from flaws, in the area we noted huge differences in the working of the shops and distribution of the cards in different regions. In some of the Fair Price Shops like the one Nathuakhan, food was available each month, in general the response towards the quality of food was good and people were happy with the working of the Public Distribution System. However, in some of the other ration shops like ones In Supi, Mona-Chapar etc. the condition was very different, the people complained about not getting ration every month, the ration arrived at the shops once in 2-3 months and that was short in supply; since it was distributed on first come first serve basis, many of the families were did not receive ration even then.



Image: 9.4 In many villages, P.D.S shops open after 2-3 months, with no prior information. Villagers who don't have liquid cash either borrow from others or wait till next time

There was another problem with regards to the distribution of the Ration Cards in the area. The villagers said that each village had a fixed number of BPL and AAY families allocated to them and the in surveys, once the number had been exhausted all other were issued APL cards. This led to severe unevenness in the distribution of the cards.



Graph: 9.3

Also, it was noted that some of the rich and powerful people of the area has used their connections to get BPL cards while the real needy ones were left with APL cards. This problem of misappropriation in the distribution of the Ration cards was very clearly seen in Loshgyani village.

One such family was that of Mrs. Kunti Devi in the village of Loshgyani. They owned just 7 naali (approximately .3 acres) of land in which they planted food crops for the family as well as had a few fruit trees. They had 2 buffaloes one of whom was very old and gave no milk while the other one was also not giving milk at the time we went. The family had 7 members and had no alternate occupation except for agriculture. They had one member above 65 years of age who received Old age pension, one member had MNREGS job card but had never received any employment under the scheme. The family was completely hand to mouth and was suffering from great financial difficulties; they had applied for funds under Indra Aawas Yojana as well but never received any help. They had and APL card which had been made in 2002, they said that since then they had tried many a times to get a different card, had talks with the Pradhan who had promised to look into the matter but no change had taken place. The food from the ration shop lasted them for 10-12 days and they were forced to but ration for the rest of the months from the market.

The two main problem that were referred to by the villagers while talking about the FPS shops were related to the quality of the produce being dispatched at these shops being low and inferior and the other problem was that the quantity provided to them was not sufficient to meet the requirements of their family and even after getting the ration, they had to be dependent on market for purchase of the ration. Another fact that compounded the problem was that there was no system in place to inform the villagers about the arrival and distribution of ration in the shop, they said that a board was put up in the shop stating that ration will be distributed today, this left them with

no time to arrange for money to purchase the ration and also, some of the families never came to know when the ration was distributed. As a result many families were left without the ration of their allotted quota for the month and were forced to buy it on debt from the local market. One good thing was that in some of FPS, the families not receiving ration for a month were given two months of ration the next month to compensate and though it helped, still it left the families in debt of the local market shopkeepers.



Image: 9.5 People often complain about black marketing of food grains meant for them.

Of the families surveyed under the survey, nearly 95% were regularly making purchase from the ration shop of their respective villages. The rest of the 5% of the families were APL families who did not want to stand in the long queues waiting for the ration. Also of the surveyed household, only 7% had the correct knowledge about the prices at FPS and the quantities they were entitled to. The situation was worst in case of sugar where only 3% of the families were aware of their entitlements. Many of the families complained about irregularities with regards to the updates made in the

cards. Families who had applied for updates and had received new cards were still given ration as specified in the earlier cards as the updates had not been communicated to the FPS dealers and they refused to accept the new changed cards.

9.3.3 Major issues Linked with PDS

Apart from all these problems, following were some of the main problems faced in the PDS system.

Navin Chandra, B.P.L card holder of Village Chapar:

“Hum logon ko card me likhe unit se kumsamaandetehai.... Baaki ka bachahua ye log black me bechtehai” [(The distributor at P.D.S) gives us less quantity as mentioned in card..... And, he black-markets the remaining quantity at higher prices.]

- In almost all the villages, rice and wheat were not made available to the families owning ration cards. Even when these items arrived, a single day was fixed for distribution so that the income-poor (BPL) families were deprived. The simple reason is, apart from lack of timely information, the BPL families lack the power and time to collect money to buy the items abruptly announced for sale through the FPS.

Dewaan Singh of Village Buribana:

“Control se josamaan miltahai.... Uska koi fix time nihai.... Kabhi- kabhi to 2-3 mahine me ekbaraatahaisamaan.” [There is no fix time to get food grains from Control's shop..... Sometimes, we get (the food grains) once in 2-3 months]

- False/wrong entries in the cards for most of the BPL families, entries implying that all these families got all the items at scheduled rates (quantity and price).

- The quantity of ration is not based on the number of members in the family
- No cash memo was ever issued by any of the FPS owners.
- Even when the items were made available and the supply position was announced by the FPS Dealer, the prices per unit of items were not displayed.
- Sugar was usually irregular in supply.
- Kerosene per head was distributed much less than what was allotted and that too at prices higher than the scheduled PDS rate.
- The section in higher socio-economic category derived almost all the benefits from irregular supply of items from the FPSs.

Manish Bisht, A.P.L card holder of Village Chapar:

“samaannahilekeate Kyunkimiltanahihai time pe.... Ye apnimarzi se aatehaikabhibhi..... binakisi ko bataye...” [(We) don't purchase food from P.D.S shops... As we don't get anything on time and (he) comes as per his wish... without informing anyone.]

9.3.4 Few Recommendations by the Villagers

- Information must reach the cardholders well in advance per period (month) regarding arrival and distribution of items through the FPSs
- Quality of all items should be better
- Rice and Wheat should be distributed to the APL households at the same price as it is for the BPL households (mainly suggested by the APL households)
- There has to be regular inspection over the system operating at the village level
- Diversion of items to open market should be stopped
- The Fair Price dealers seldom display rate chart and quantity available in the blockboards in front of the shop. This should be enforced.

9.3.5 Additional Recommendations

- There has to be regular distribution of items throughout the period (month) rather than distribution of all items on a single day, this facility should at least be set up in place for the BPL and Antodaya households

- There should be a separate FPS for each village to ensure that the queues are controlled and ration is distributed properly, thus allowing more people to make use of the scheme
- Ensuring of verification of ration cards at the level of households each year, issue new cards (for example, for new-born babies), issue cards to card less households/individuals, cancel false cards, reorient misallocated (for example, by BPL and APL categories) cards etc.
- Measures are needed, to be initiated by the Supply Department, which reduce the transportation cost of the FPS Dealers in carrying items for distribution
- Margin of profit should be increased for honest business to the FPS shop owners, in which case the market system is more apt anyway
- Frequent checks & raids should be conducted to eliminate bogus and duplicate cards, which is again an added expenditure and not fool proof
- Allotment of new FPS Dealership to local unemployed educated youth, preferably from the socially disadvantaged and economically vulnerable section of the locality.

10.1 NATIONAL OLD AGE PENSION SCHEME

10.1.1 Brief Overview

Indira Gandhi National Old Age Pension Scheme¹³ (IGNOAPS), launched in November 2007, is a component of National Social Assistance Programme (NSAP)¹⁴. This scheme is one of the several measures of the governments at the Centre and State to provide social assistance or social security to various needy sections of the society. National Old Age Pension (NOAPS) is a Centrally Sponsored Scheme, which has been launched by the GoI to mitigate the hardships faced by the destitute old population.

10.1.2 Eligibility Criteria and Benefits Linked

Central assistance under the NOAPS is available for old age pensions provided:

- The age of the applicant (male or female) is 65 years or higher.
- The applicant must belong to a BPL household according to the criteria prescribed by the Government of India.

Now, both husband and wife are eligible if they are above 65. Earlier clause that the recipient must be a destitute, in the sense of having little or no regular means of subsistence from his/her own sources of income or through financial support from family members or other sources, has been withdrawn.

If any applicant fulfills these criteria, (s)he is entitled to get central assistance of Rs 200/- per month, which is provided to the States under IGNOAPS and further, the state government have been urged to contribute Rs. 200/- from their resources. Uttarakhand is one of the nine states which are offering Rs 200 from its own resources; hence any old age applicant in the state is eligible to get Rs 400 per month.

Details of State-wise contribution for Old Age Pension under IGNOAPS:

¹³ Indira Gandhi National Old Age Pension Scheme (IGNOAPS) came into existence from 19.11.2007 and was earlier known as National Old Age Pension Scheme

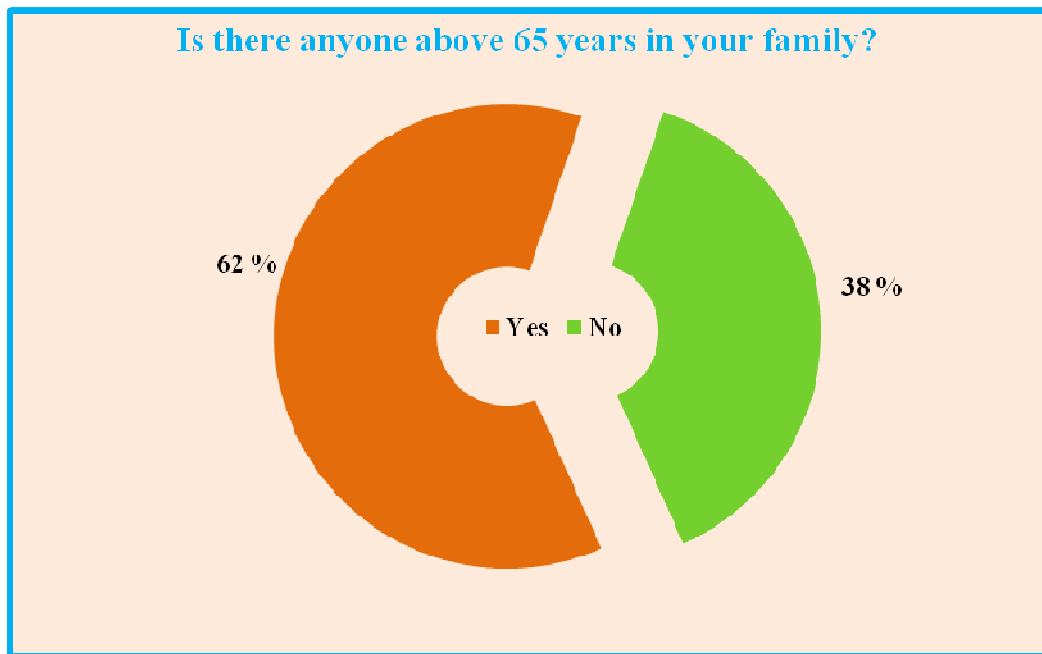
¹⁴ Source: nsap.nic.in, accessed on June 25, 2012

Name of States/UTs	Amount of pension provided as Central Assistance	Contribution of State Government per pensioner per month under IGNOAPS
Uttaranchal	Rs. 200.00	Rs. 200.00

Source: Annual Report 2006-07, Ministry of Rural Development, Govt. of India, New Delhi.

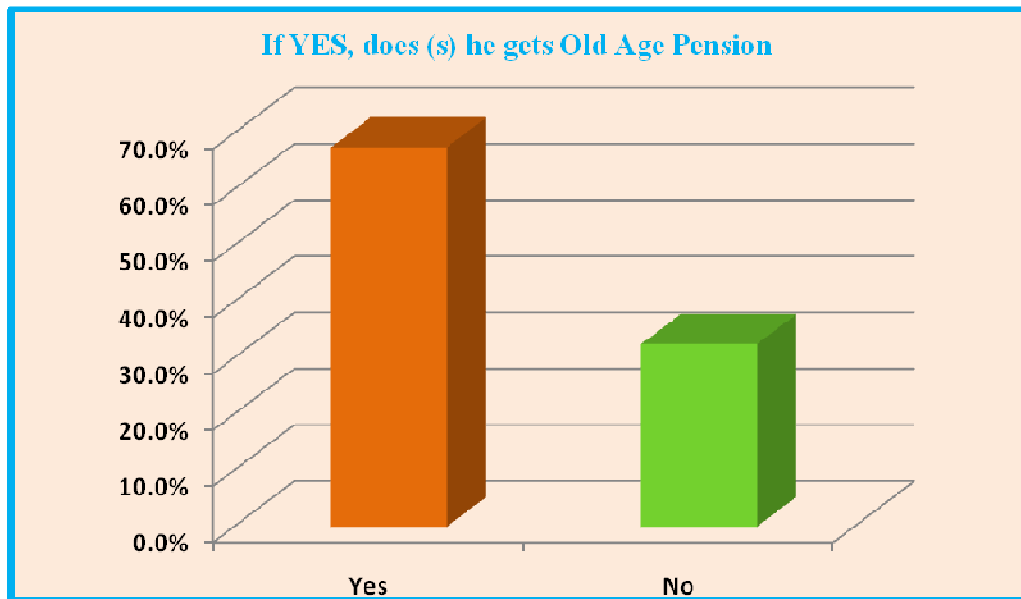
10.1.3 IGNOAPS in Villages Surveyed

To study the penetration of this scheme, the primary objective was to know the number of villagers above 65 years. Hence, in our study, it was found that 62% of the BPL households in all villages had one or more member(s) who was/were above 65 years of age. Hence, as per the eligibility criteria, they are entitled to get Rs 200 per month from central government and Rs 200 from state government.



Graph: 10.1

The secondary question was directed to these households, whether there is anyone receiving Old Age Pension or not. Around 67.5% of the eligible households agreed that they get the pension of Rs 400 whereas remaining 32.5% included all those who have either applied for pension or those who even after applying are not getting pension. Villages like Myora, Supi (Dewra Tana) and Chapar are few villages where none of the old age villager is getting Old Age Pension.



Graph: 10.2

Ramesh Bisht of Village Supi (Dewra Tana):

“Pension keliye 2 saal se kagazlagarakhehai..parkuchnahihuahaiabhitak... kisi officer se baatkaro to kehtehai ho jayega... ptanikabhamari pension milegi” [(I) have submitted papers since 2 years. But nothing has been done so far. If (I) talk to any officer, they say “it will be done”... (I) don’t know, when will I get my pension]

One of the striking facts in the households getting pension is that majority of them gets pension after two to three months. This is troublesome to the destitute as they have to travel long way to get the money. Some of the pensioners said that they make repeated round trips of the offices and other camps to get their pensions.



On the other hand, the households who do not get the pension faced many problems, starting from filling the application

form, getting themselves registered till the time of receiving payment. Many of them also raised this issue during Gram Panchayat meeting but said their complaints does not get any ear and they find themselves incapable to do something.

10.2 ANNAPURNA SCHEME

10.2.1 Brief Overview

Annapurna¹⁵ scheme aims at providing food security to meet the requirement of those senior citizens who though eligible have remained uncovered under IGNOAPS. The number of persons to be benefitted from the scheme will be 20% of the persons eligible to receive pension under IGNOAPS in states/UTs.

10.2.2 Eligibility Criteria and Benefits Linked

Central assistance under the Annapurna Schemewill be provided to the beneficiaries who fulfill all the criteria as required in IGNOAPS. But, the applicant should not be in receipt of pension under the IGNOAPS or state pension scheme.

If any applicant fulfills these criteria, (s) he would be entitled to 10 kgs. of food grains (wheat or rice) per month free of cost.

10.2.3 Annapurna Scheme in Villages Surveyed

In all 25 villages where this study was conducted, no one has even heard about the name of this scheme. In relation to the question: “Have you heard about the government scheme named Annapurna?” 100% of the households said that they have not heard about this scheme and so, the question regarding the benefits was redundant.

It might be the case that the state has covered all beneficiaries under IGNOAPS and so, no one is considered eligible for Annapoorna Scheme by the state government. The hidden rationale behind this can be that in Annapurna scheme, the central

¹⁵ Source: Ministry of Rural Development, Government of India

government has to offer 10kgs. Food grains per beneficiary per month free of cost. Also, the state government website states nothing about the scheme.

Hence, it can be concluded that in these villages, only IGNOAPS is the scheme which serves the old age destitute.

10.3 MATERNITY BENEFIT SCHEME

10.3.1 Brief Overview

Janani Suraksha Yojana (JSY)¹⁶ is a new maternity benefit scheme launched by GoI (Government of India) in 2005 with the main objective of reducing maternal and neonatal mortality by promoting institutional delivery among poor pregnant women. This scheme is a safe motherhood intervention under the umbrella of National Rural Health Mission (NRHM). It is a 100% centrally sponsored scheme. It integrates cash assistance with delivery and post-delivery care. It also provides cash incentive to beneficiaries and promoter as well. This scheme was implemented in all states and UTs with a special focus in 10 Low performing states (LPS)¹⁷. Uttarakhand is a state which belongs to LPS and JSY was implemented in the state in 2005.

10.3.2 Eligibility Criteria and Benefits Linked

- ***Cash Assistance for Institutional delivery***

The eligibility criteria for cash assistance under this scheme is that all pregnant, SC and ST women delivering in government health centres which include sub-centre, PHG/CHC/FRU/general wards of district and state hospitals or accredited private institutions. Any woman belonging to a rural area and who fulfills these eligibility criteria will be given Rs1400 cash for institutional delivery.

- ***Assistance for home delivery***

¹⁶ National Maternal Benefit Scheme (NMBS) has been replaced by JSY from FY 2005-06. However, the cash benefits of NMBS have been incorporated in this scheme.

¹⁷ Source: Ministry of Health and Family Welfare

In Uttarakhand, any BPL pregnant woman aged 19 years and above, preferring to deliver at home is entitled for cash assistance of Rs 500 per delivery, limiting up to 2 live births.

▪ **108 Ambulance services**

108 services is a free of cost ambulance service, introduced by the state in 2008 and play a vital role in promoting institutional births.

10.3.3 JSY in Villages Surveyed

In the 25 villages we surveyed, it was found that almost everyone is aware about this scheme. However, this awareness is only due to word-of-mouth marketing. Majority of the households surveyed said that they have heard about the scheme. But on further discussions, it was found that these households are unaware about the eligibility criteria and the benefits linked with these schemes. As stated by them, a major reason is the lack of communication and awareness generated by the local and state government.

Geeta Pande of Village Kokilbana:

“ANM ka sune to hai... magarwaha se kuchsuvidha... koi iron ki goli... kuchnimilaabtak..” [(I) have heard about ANM... But (I) have never received any facility... any iron tablet.]

Around 56% of the households studied said that they have never received the benefits under JSY. Of these, few agreed that they have heard about the scheme but again were not very well acquainted with complete details of the schemes and in turn were not aware of what they should get from this scheme. The women residing in the villages which are located at difficult terrain face extreme problems especially during pregnancies as there are no reliable means available to transport them up to road head from where 108 EMRI or any other ambulance can be accessed hence deliveries taking place in these villages are mostly unassisted home deliveries.

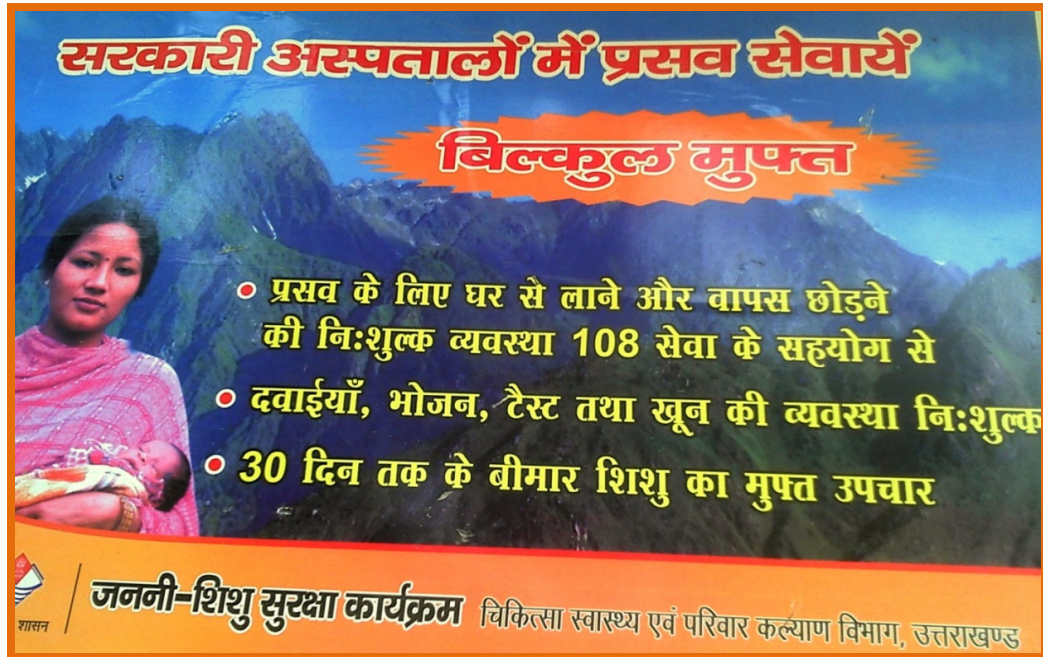
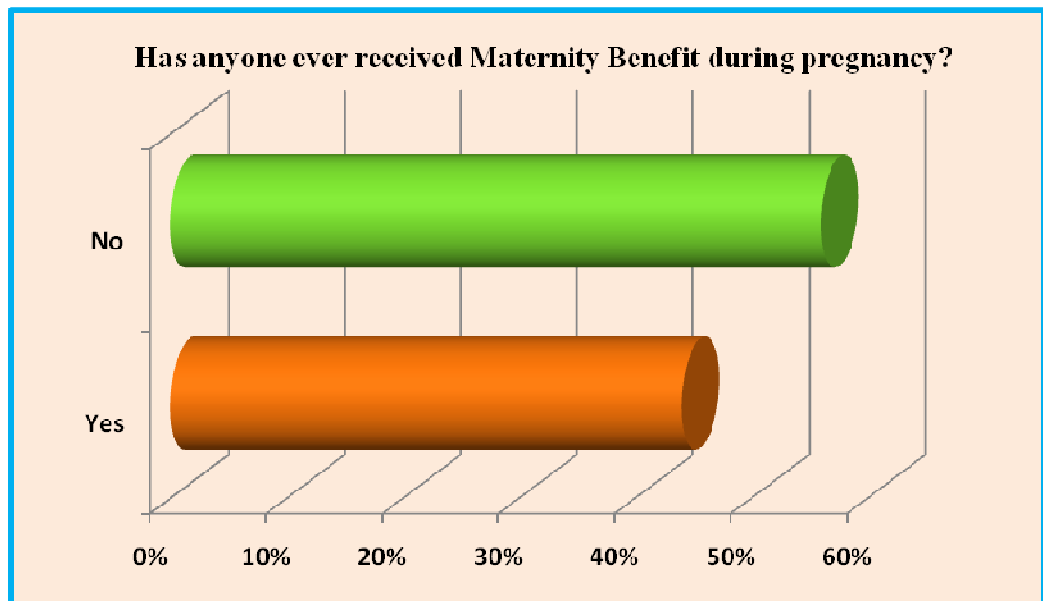


Image: 10.2 Awareness level about 108 is high in the area. Villagers have started availing the facilities provided by JSY.

The villages where less than 5% people have got any benefits linked with JSY are Loshgyani, Simayal, Paiyakholi and Supi. The households in these villages had non-institutional delivery in most cases.



Graph: 10.3

On the other hand, only 44% of the households have received some benefit(s) from government health centre located in Malla Ramgarh. It can be said that J.S.Y acts as a main propeller towards the increasing number of institutional deliveries. These households do received Rs 1400 per institutional delivery. This scheme is utilized by a majority in villages like Kokilbana and Buribana.

ग्राम स्वास्थ्य एवं स्वच्छता समिति																						
ग्राम - बूढीबना																						
गठन तिथि - 19-12-2008																						
मासिक बैठक - प्रथम बुधवार																						
स्थान - कोटकी धार ANM सेंटर																						
क्र.सं.	नाम	पिता/पति	समितिके पद	विशेषीय पद	उपस्थिति विवरण मार्च 2011 से अप्रैल 2012 तक																	
					रुं	रुं	रुं	रुं	रुं	रुं	रुं	रुं	रुं	रुं	रुं	रुं						
1	श्रीमती बीता देवी	श्री सडक सिंह	अध्यक्ष	प्रधान																		
2	मोहन राम		सचिव	ग्रा. वि. अ.																		
3	कुन्ती देवी	महेन्द्र सिंह	स्वस्थ्य	आशा																		
4	कुन्ती देवी	देवेन्द्र सिंह	"	आशा																		
5	जानकी देवी	कैलाश सिंह	"	आंगनवाड़ी																		
6	तुलसी देवी	सुप्रेम सिंह	"	दाई																		
7	नीलम धुसिया		"	प्रधानाचार्य																		
8	दीवान सिंह	सुदलपत सिंह	"	जल निगम																		
9	दीपा बिष्ट	गंगा सिंह	"	उपप्रधान																		
10	जया पांडे	सतीश पांडे	"	ANM																		
11	दीवान राम	लक्ष्मी राम	"	NGO																		
12	राम सिंह	अमर सिंह	"	म. प्र. सैनिक																		
13	राजेंद्र सिंह	खडक सिंह	"	नव युवक																		
14	कुन्ती देवी	हयात सिंह	"	सग्रह																		
15	कुन्ती देवी	केदार सिंह	"	सग्रह																		

Image: 10.3 ANM centre open only for once and twice in a month. But, pregnant women do get iron tablets.

Also, these households agree that the introduction of 108 EMRI Ambulance services, which is free of cost, by the state since 2008 has proved to be boon and is one of the major driving factors in promoting Institutional births in these villages. In these areas, people know this scheme more with the name of “108 Seva” and are quick to recall the services received under this scheme.

In all villages surveyed, there were many households who received ANC services like IFA tablets, Antenatal visits, T.T immunization etc. whereas deliveries in these households were non-institutional. Also, ANM rarely visited the households to do regular check-up of woman before and after pregnancy and were usually available for a day in a month in her clinic. This was also a serious cause for lack of people’s interest in this scheme.

Also, the households using 108 EMRI raised an issue that this is a one way transport arrangement; it picks up the emergency case and drops it to the nearby facility where the services are available. It does not provide drop back facility from the institution to home post-delivery.

On the whole, the households who were aware about this yojana looked satisfied with the delivery of all benefits and received cash assistance and other check-ups on time.

10.4 MNREG SCHEME

10.4.1 Brief Overview

Mahatma Gandhi National Rural Employment Guarantee Scheme¹⁸ (MNREGS) is a scheme of the GoI with the objective to enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. NREGA covers the entire country with the exception of districts that have a hundred percent urban population.

10.4.2 Eligibility Criteria and Benefits Linked

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) will be open to all rural households willing to do unskilled manual work in the areas notified by the Central Government. The entitlement of 100 days of guaranteed employment in a financial year is in terms of a household. This entitlement of 100 days per year can be shared within the household; more than one person in a household can be employed (simultaneously or at different times). After all documentation and verification, a job card is issued to the labor.

Every person working under this scheme is entitled to wages at the minimum wage rate fixed by the state government, which is Rs 120 in Uttarakhand.

10.4.3 MNREGS in Villages Surveyed

¹⁸ Source: The NREGA Act (2005), Ministry of Rural Development, New Delhi

*Naali is a term used for measuring land area in these villages. 1 acre = 10 Naali & 1 Hectare = 20 Naali

The criteria to get a job card in the villages studied were:

- Member should belong to a BPL household
- That member must possess land less than 10 naali*

During our interviews, it was found that almost every BPL family had a job card. Majority of the card holders have worked for few number of days. The average number of days for which these people got work varies from 10 to 25 in different villages. Very rarely has anyone worked for complete 100 days. During our visits to these households, we came to know various ground realities pertinent in these areas. They are:

- ***Ambiguous distribution of P.D.S card***

In these villages, job card is issued to those household which belong to BPL category. The process of distribution of P.D.S card is very ambiguous. The cards are allocated on random basis, Sarpanch favoring families belonging to similar castes, allocating cards till a fixed benchmark¹⁹ is reached and as per the bias of the Block Pramukh.

- ***Complicated criteria of land holding***

Officially, the BPL card is issued to that member of the household who has registered land under his/her name. Apart from this member, no one can be issued a job card till s(he) has some land registered.

Another criterion is the possession of land holding less than 10 Naali. Now in these villages, rarely people have land less than 10 Naali, so they are considered ineligible for job card.

Apart from this, in case the property is registered under one name and many brothers are living together there, then other members who are willing to work do not get job card and only one card is issued. Even if people have gone a step further and divided and then registered the land among different members, they were not issued a job card.

¹⁹ By benchmark, we intend to report the upper cap which was fixed by state government for the number of BPL cards to be distributed. After reaching this number, all were issued APL cards, without following the allocation process.

- ***Lack of transparency in payment of wages***

After the completion of the work; officially, the payment should be transferred to the account of the labor. But in some cases, labors who worked in some project got their payment in installments.

- **For e.g.** A labour in village Supi worked for 10 consecutive days to construct rainwater harvesting tank in nearby area. So, as per rule, his payment should be made in 15 days but in this case, he received his full payment in one complete year. And this was not paid once and rather, he was made to travel to 5 different villagers, this was due to the fact that his payment was being transferred to many different accounts. So, to get his Rs 1,200; he waited and traveled for a year.

- ***Lack of projects***

People in these areas are interested to work on any project, but the government does not provide any work to these workers. Majority of them just work for 10-20 days in a year. Also, as per the MNREGA act, these villagers are eligible for unemployment wages which is also not paid to the card holders.



Graph: 10.4 Villagers have been issued a job card under MNREGS but due to lack of work and delay in getting payment, are shifting to other source of income.

11.0 FOOD CONSUMPTION: PATTERN & PERCEPTION

The food consumption pattern of the area is nearly consistent throughout the region. Food is cooked thrice a day in nearly all the households in the village. This generally varies season to season, during the sowing season the food is generally cooked twice and is taken to the fields for lunch as the women of the household are busy with the agricultural activities.

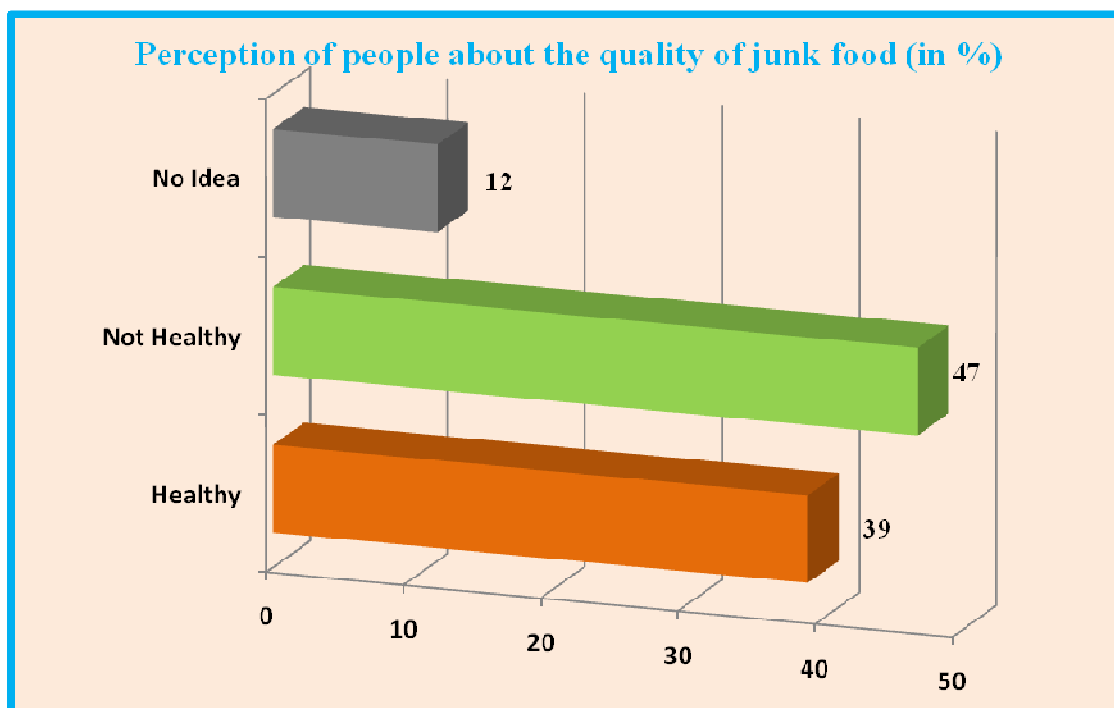
Rice and Dal is a staple diet in the region and is cooked once each day in all the households. Vegetables are cooked based on availability; seasonal vegetables like green vegetables, pumpkin, gourd etc. are cooked in the rainy season, when they are easily available from the fields in the village itself. Most of the families knew about the importance of vegetables as a part of food, however, it is not a regular part of their diet; this is because of the unavailability of these in the local market and high rates.



The breakfast in the area is generally cooked early in the morning and mainly consists of Chapatti and Dal (Sabji depending on availability). At times, when lunch is not cooked, breakfast is stored for lunch. Else, the lunch generally has Rice and Dal as the staple diet. The dinner again consists of Chapatti and Dal.

Image: 11.1

With the commercialization of the area, packed and ready-to-cook junk food has become a regular part of the lives of the children. Nearly all the families regularly consumed Maggi, Kurkure, biscuits etc. People were generally not aware of the nutritional quality of these foods. Many of the families also gave these products even to pregnant woman as they were considered healthy by them. As shown below, 40% of the people considered packed and fast cooking junk food good for health.



Graph: 11.1

The statistic clearly shows the lack of information amongst the villagers, a change in the pattern is necessary and correct information about the harmful effects of these packed products needs to be disseminated amongst the villagers to help them make informed decisions regarding purchase of the items.

Naveen Chandra Sharma of Village Chapar:

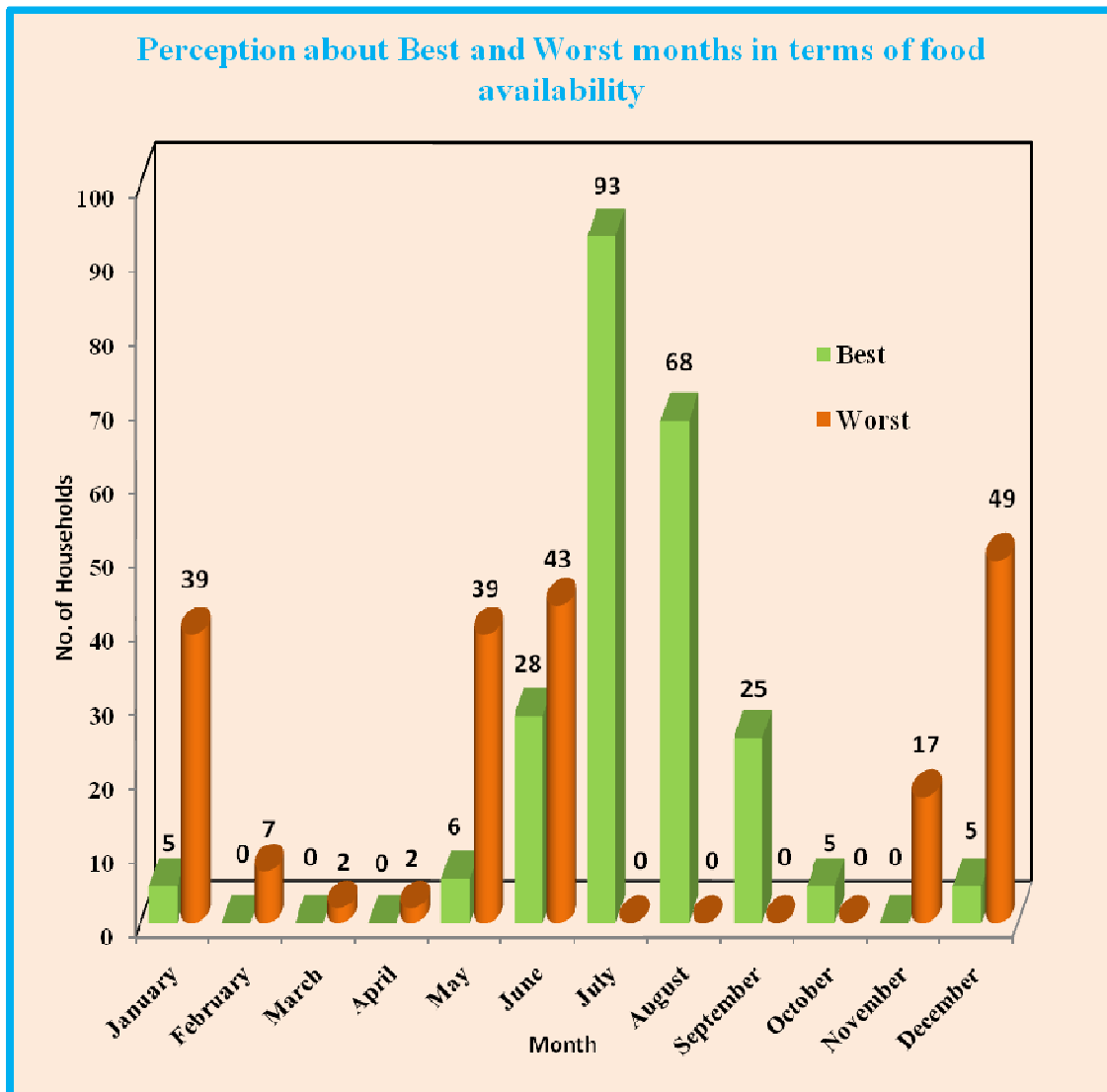
“Maggi to acchi hi hoti hai wasthi yakeliye. Sab gaun wale khate hain.....to hum ne bhilana shurukardi... Waise bhi baccho ki baat to sun nipadti hai ...” [Maggi is healthy for health. All the villagers eat it... (so) we also started purchasing it. (Also) we have to listen to our children also.]

When asked about nutritious food, the people had no or very little idea about the concept of balanced diet. Though, they talked about green vegetables, milk, salad, ghee etc. to be important for us having enough nutrition, nearly no one said that they took these things regularly. They said that all these things were subject to availability from the field or in the

house. Very little or no purchase of milk was made even in the well-off families, when the cattle was not giving milk; whole families went without it for months. Green vegetables were also available only during rainy season, for the rest of the year; the diet did not contain any vegetables.

Due to change in the eating pattern and also the cultivation pattern of the area, many of the foods that were a part of the diet earlier have now become extinct or their usage has decreased significantly. Switching to cash crops in place of food crops has led to sharp decline in the production of madua (finger millets), corn (makka); jaun etc. and people get very little of these products to eat as a part of their daily diet. Along with this, some of the products like jhingora, bajra, gauhat and urad dal etc. are not cultivated any longer. Along with this, many vegetables like cabbage, capsicum, beans etc. which were grown earlier for household consumption are now mostly sold in the market, as a result very little of them is left with the family. This is also one of the reasons that very little preservation of food and vegetables is done. Thus, due to sale, villagers have much less to consume from their fields when compared to the earlier times.

Since most of the agriculture in the region is rain fed, seasonal variations in the fortune of farmers is inevitable. When asked about the best and worst time of the year, the answers generally showed that rainy season was the best for all the farmers, the primary reason being availability of vegetables in the season, allowing the villagers to get to get good diet and also good income from the sale of these vegetables in the market.



Graph: 11.2

From the graph above what can easily be seen is that most of the best people rated the rainy season to be the best, but there were hugely different opinions with regards to the worst months. This can majorly be attributed to the kind of cropping pattern in the area, villagers who usually had large orchards and depended on fruited generally considered winters to be the worst time; on the other hand the villagers who depended on food crops and vegetables voted summers as the worst times because of the low levels of water in the area at the time, no rainfall and no possibility of any kind of crops. Most of the fields of these farmers in the summers were barren, thus they considered summers to be worse than any other time of the year in terms of the status of food security for them.

11.1 RECOMMENDATIONS

- Information about the health hazards posed by the junk and packaged food to the villagers so that they take informed decisions about their consumption
- Establishment of a seed bank for the introduction of various hybrid varieties of seeds of vegetables, millets, dals etc. in the area that can be used by the farmers in different years depending upon the climatic and weather condition of the year as the variations across different years in the climate are huge
- Establishment of irrigation schemes like rain water harvesting tanks, pipelines etc. to ensure better supply of irrigation facility to reduce the problem as far as possible
- Informing the villagers about the concept of balanced diet and its importance to ensure good health to motivate them to take better diet
- Setting up market for products like madua, jhingora, makka etc. to encourage farmers to shift back to these crops and ensure better and wider food basket for the village

12.1 WATER: HEALTH AND RELATED ISSUES

12.1.1 Situational Overview

Water in any part of the world is considered to be the most critical natural resource. Uttarakhand is state of the forest and can probably be best defined by the status of water resources which originate within its folds. The hilly terrain of the villages is a major problem to all the households, who travel longer distances to meet their daily water requirements. Uttarakhand is blessed with rich sources of water. Rivers like Ganga and Yamuna originate and flow through Uttarakhand. As per the census 2001, the state is ranked 6th in availability of safe drinking water.

There are various sources of water in the villages. The primary source of water is known as naula²⁰, whereas the secondary water sources are called gadheras and finally the tertiary source of water is the river. All these are traditional sources of water. Apart from all these sources, there are private and government pipelines present in various households.

Out of all these sources of water, generally speaking, villagers use naula for fetching drinking water whereas gadheras are used minor irrigation and other daily domestic requirements. The river water is primarily used by villagers for doing irrigation in farms located along the valley. This provides an advantage to all those villagers who have a river in proximity to their farms. The gadheras which were used for agriculture are non-functional sometimes as they get dried up completely and were useful only during monsoon and post monsoon months.

12.1.2 Availability of Safe Drinking Water: Ground Reality

During our study, it was found that nearly half of the total villagers get their drinking water from Naulas. Generally, these naulas are located far away from the households and people travel longer distances to draw water for their daily needs and livestock. In villages like Nathuakhan, Supi (Dewra Tana), Myora and Mona, almost everyone is dependent on naula for drinking water need. Apart from the naulas, 25% of the

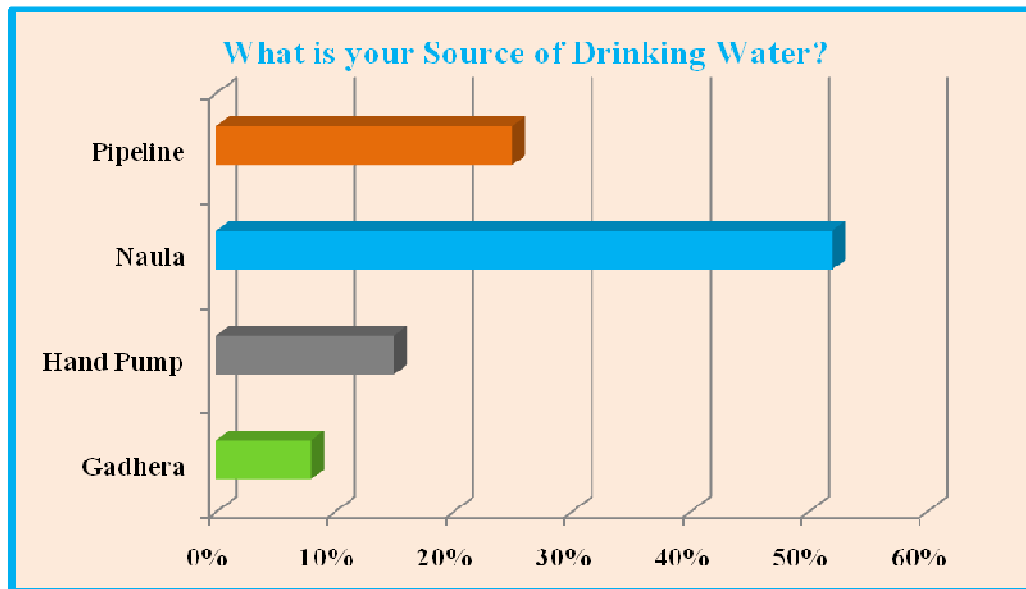
²⁰ Naula is an underground source of water found in Uttarakhand. People use this water for drinking purposes as well. It is believed that, these naulas were built during pre-independence era by British Government.

households get water from the pipeline installed at their places. There has been a significant increase in dependency over piped water supply, as it is perceived that water availability becomes certain. These pipelines are either installed by government and other agencies working in these areas. Also, under the Swajal Project, village communities have set up their own water supply. These supplies are maintained by communities themselves. The practice of getting drinking water from pipelines is mostly seen in Darim and Barait.



Image: 12.1 The situations gets worse in summer, where women (generally) travel kilometers to get drinking water for the family and livestock.

Hand pumps are another source of drinking water to approximately 15% of the households. These hand pumps are installed by the government and are used by the community. People of villages like Harinagar and Buribana are dependent on community hand pumps for meeting their drinking water needs. Also, in many villages, people have access to hand pump water supply. But many complained that even these are not able to tackle the daily water requirements as they are functional only during monsoon and post-monsoon months. So, during remaining period of the year, the village community depends on multiple options for fulfilling the requirement of drinking water.



Graph: 12.1

Merely 8% households use water of gadheras for drinking purposes. Loshgyani is an example where water from Gadheras is used for drinking purposes.

12.1.3 Impact on Water Sources

It has been observed that with the slow destruction of the forest resources, the main physical casualty amongst the three water resources, felt by the community, are the primary water sources – naulas. Presently, there are lesser number of naulas which are functional as compared to the number present, say about 10 years ago. The rest of the naulas have dried up and/or has very less water. This might be because of the reason that the ecological status of the catchment areas is not favorable for allowing infiltration of rain water to recharge the water sources.

Also, since the functional water sources have declined in number over a period of time, it adds to the drudgery of women and children who now travel longer distances to meet their daily water requirements. The families having some livestock find it to be more troublesome to take water for them on the hilly terrain.

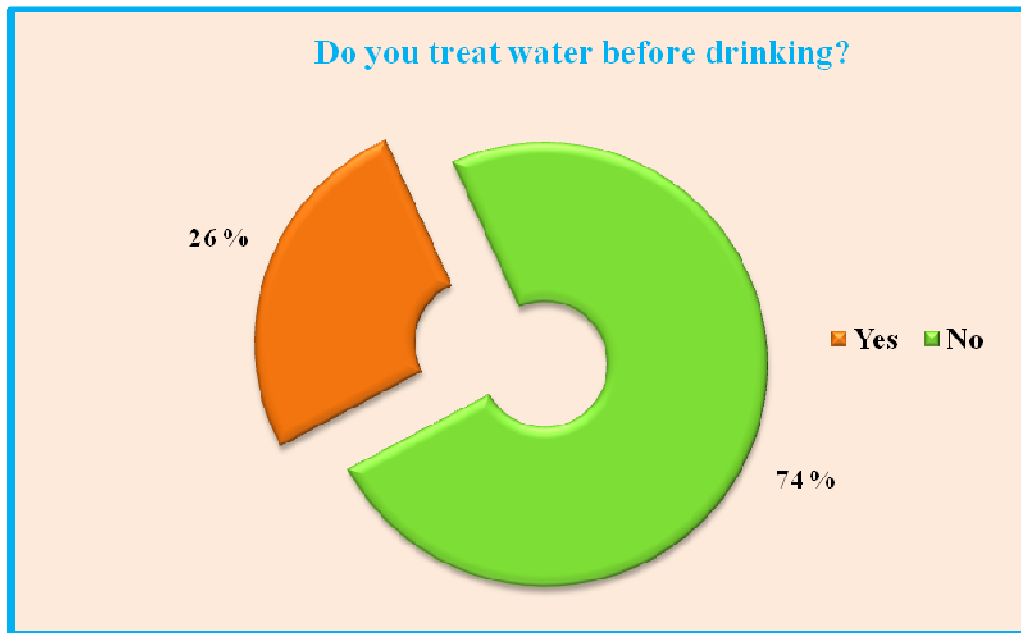


Image: 12.2 Water level in *Naulasis* decreasing every year

12.1.4 The Question of Water Treatment

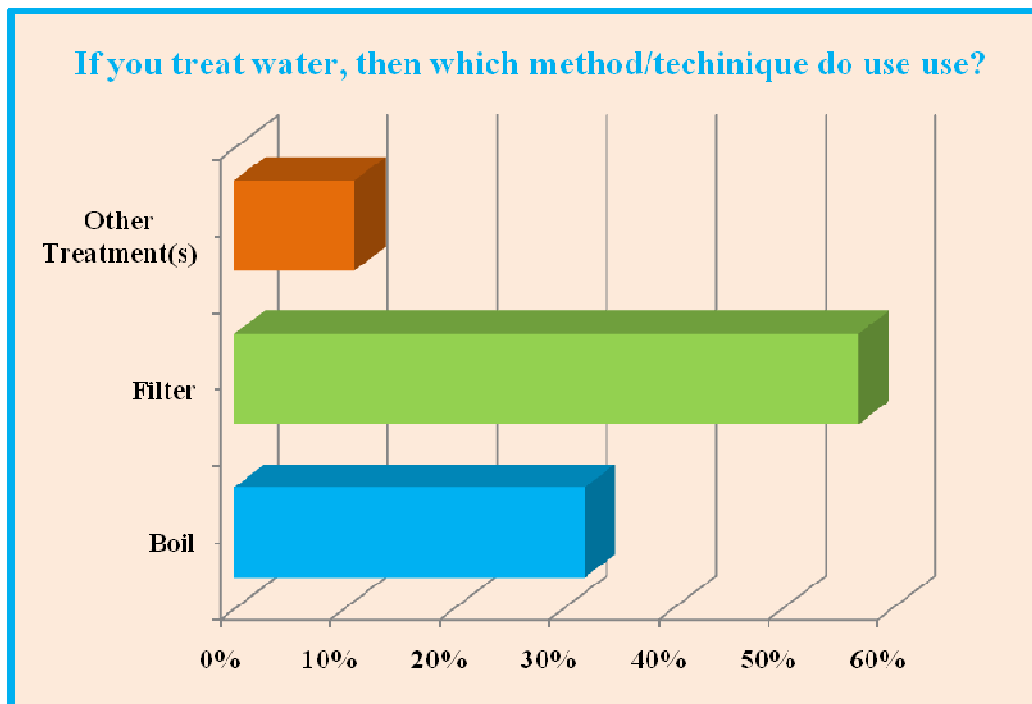
After studying the source of drinking water, we further tried to study if people treat water before drinking to make it safe and free from water-borne diseases. And if they do treat water before drinking, what methods or techniques do they use?

In response to the question “Do you treat water before drinking?” only a quarter of the households agreed that they treat water before drinking whereas a majority, 74% of the people said they don’t treat water before drinking.



Graph: 12.2

Further, those 26% of households, who treated water before drinking water, were asked about various methods used to treat water.



Graph: 12.3

57% of these villagers filter water before drinking. The technique of cloth filtration, wherein a piece of cotton cloth, is used to filter water either while filling water from Naula in the containers or when filling water from buckets etc. to containers used to store water at home. It was further observed that people store water in utensils of bronze as they were of the opinion that water gets purified in these utensils.

One-third of the households boil water at home before consuming it. The reasons for boiling water before drinking:

- Either they suffered from some water borne disease in the past or/and
- They were advised by doctor to consume boiled water.



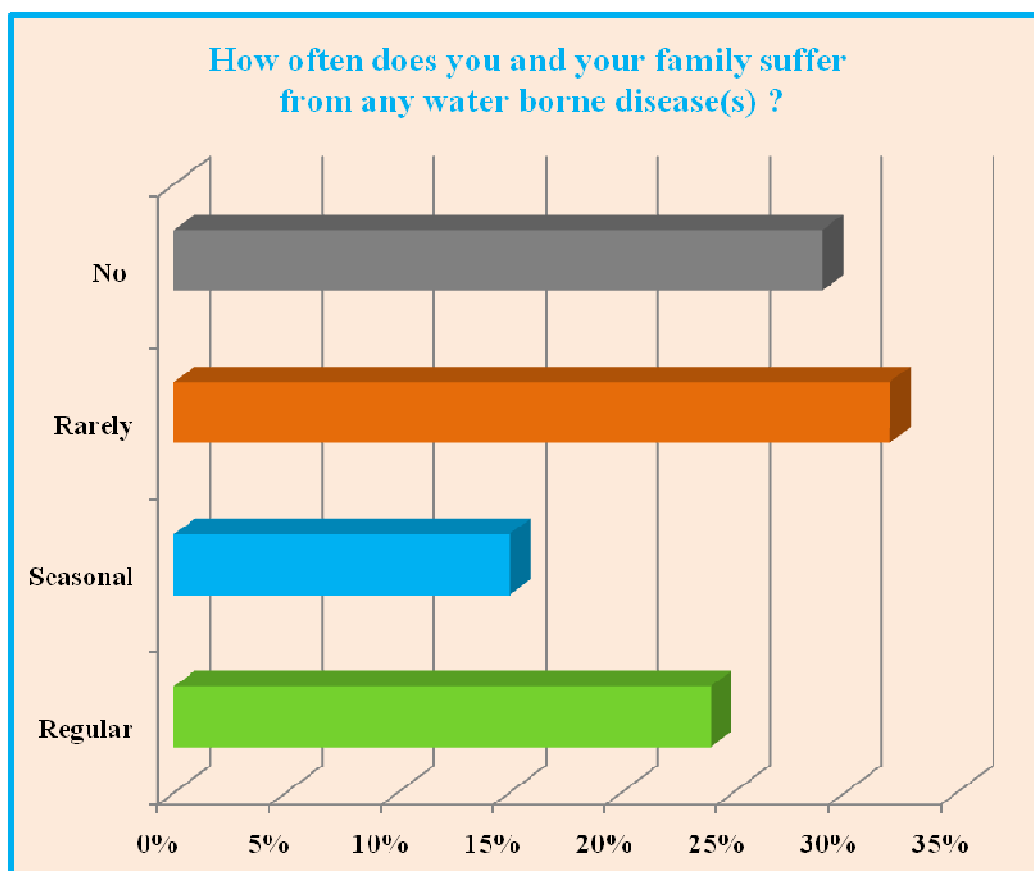
Image: 12.3 Various other schemes are also running in the area to provide safe drinking water.

This habit of consuming boiled water was seen to be more common among families with small kids. The rationale for this could be the vigilance about water-borne disease(s) or/and the fear of suffering from a disease.

The remaining 17% people said they use methods other than this as a method of treatment. These methods are using chlorine tablets, which they get from ANM centre and the market.

12.1.5 Frequency of Water-Borne Diseases

Water-borne infections are problems of immense proportion in India. Eighty per cent of the diseases in India are linked with contaminated water. While accessing drinking water continues to be a problem, assuring that it is safe is a challenge by itself. Water quality problems are caused by pollution and over-exploitation²¹.



Graph: 12.4

The situations in the villages of Uttarakhand are no different. To validate this, another part of our study was aimed to know the frequency at which people suffer from any of the water-borne diseases. It was found that in these villages, diseases like jaundice²², diarrhea and loose-motions were common. The reason for this is that there is no proper source of safe drinking water and hence, villagers are more prone to water-borne diseases and skin problems.

²¹ Drinking water quality in rural India: Issues and approaches

²² Jaundice is commonly known as Pilia in these villages. It is a hindi name of the disease.

Mahesh Chandra pande of Village Kokilbana:

“Swajal yojana me jo pipe lagaye the... unpeabhi paani nahihai... unmeabhijanglagahuahai.... Jab usme paani aatahai, tab uska paani peene se bimariyan ho jaatihai... ” [There is no water in the pipelines laid down under Swajal Scheme. Rusting has occurred and people who consume its water get diseased.]

In our study, it was seen that a 25 % households suffered from these water-borne disease(s) regularly. By regularly, villagers meant that the frequency of occurrence of any of the disease was high in the family. Some 15 % of the households have suffered from some disease on seasonal basis. An interesting fact related to these villagers is that they reported more occurrence of disease during monsoon and post-monsoon. Harinagar, Suralgaon, Loshgyani and Buribana are among the villages where cases of water-borne diseases are more frequent.

Rests 60% of the households have rarely suffered from jaundice or any other disease. This number is high in villages where people get drinking water from pipelines and/or treat water before drinking water. This situation of rare diseases is more prevalent in Mona, Gargaon and Chapar.

12.2 AWARENESS ABOUT PROPER SANITATION

Safe drinking water and proper sanitation are to most basic and essential requirements associated with good health. Contrary to the situation of drinking water, people in these areas are seen to be more aware about proper sanitation facilities and its associated benefits.

It was found that 100% of the households had proper sanitation facilities at their places. This included both the kuccha and pacca toilets. This can be accounted to proper implementation of Total Sanitation campaign in the state. A cash payment of Rs 1500 is made to every household who construct a toilet at their place. This has helped the villagers to cut-down on their health expense.



13.1 WOMEN: HEALTH AND RELATED ISSUES

13.1.1 Existing Situation

Life in hills is not that easy or ecstatic for the local inhabitants as for the tourists or travellers in the region. Harsh climates, difficult terrain, scarcity of water and gender discriminatory practices make life a struggle for the women of the hills. This is because women, in most cases, in the hills plays dual role of bread winner as well as bread cook. She has to not only look after her family and kids but also has to work in the field. She has to not only fetch water from miles and miles but also has to manage the fodder for the livestock and fire wood for cooking purpose. On top of it, the availability of nutritious, healthy and filling food is negligible. All in all, the women have to exhaust themselves to an extent that it leads to bodily disorders. Certain disorders as leukemia²³, anemia, depression, high blood pressure and some water borne diseases as diarrhea etc. are very common among women in the hills



Image: 13.1 It was observed that women eat their meals after her family and at times, there is a scarcity of food for her.

Traditionally, women in hills had been regarded high in esteem, worshipped and praised but as far as the female family members of the households are concerned, women's health and nutrition becomes secondary. She has meals same as the other

²³ As per the information collected from the PHC at village Mauna

members of the family regardless of the fact that her body requirements is always greater than other. Mostly the women prepare the food and serve the other family members before actually having it. This is a common practice that the women members of the family eat at last only after making sure that the other family members get their share of food. Mostly the practice comes at the cost of women's share of food.

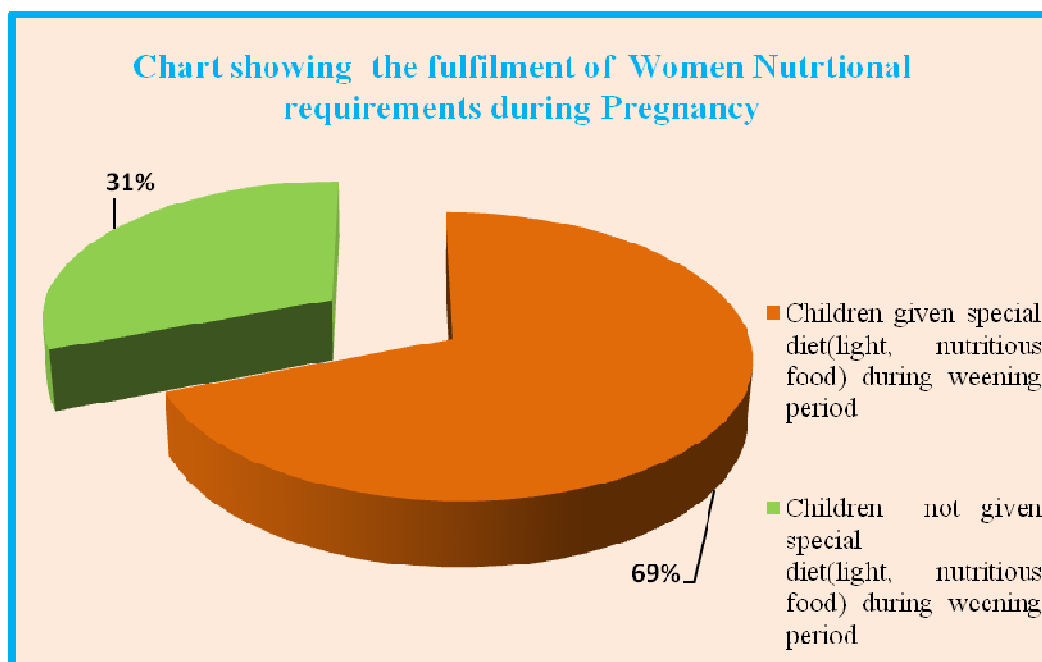
Kamlesh Pande of Village Kokilbana:

“jomaabannewaalihotihai use kuchalagnahidetehai... agar gharmeinkuchhari Sabji bantihai to wo de detehai” [Nothing special is given to the woman who is pregnant. If some green vegetable is made at home, we (certainly) give that... (to her).]

On asking women about the kind of diet their family have, they replied that they have whatever is available in the market or at their own farms. Wheat, rice, *Daal* and *Sabji* are the most common consumables. Besides, milk is mostly consumed in the form of either tea or yoghurt. Coarse grains such as *Madua*, *Jowar* and *Bajra* are grown in small quantities.

13.1.2 Recommendations by Villagers

- There should be change in the entire mindset of the families where women and daughter-in-law work whole day long to support her family. The men should equally support their families as well as their wives in the daily household chores.
- Understanding the extra needs of healthy, nutritious food as well as rest, the pregnant ladies and lactating mothers should be given extra food and iron, carbohydrate and vitamins rich diet along with adequate rest and relaxation
- The weaning children should be given light, easily digestible food products such as *moong ki khichdi*, *rice kheer* etc.



Graph: 13.1

In 69% percent of the total households surveyed, it was found no special food was given to any pregnant woman. They were given the same food which was prepared for the other members of the family. When asked, whether it is justified not to give an extra and special diet to a pregnant lady, most of them said that special diet is a matter of money. They understand the importance of giving special food to a pregnant lady but there are financial limitations to it²⁴. The above stated situation exists irrespective of the financial conditions of the household surveyed.

As a paradox, people do feed the lactating mothers at the time breastfeeding with special diet such as wheat porridge, *Aate ka halwa*, *Gont*²⁵, green vegetables, milk etc. For the child during the weaning period, several light food items are prepared so that child can easily digest the food. *Maida* is not given, while wheat porridge, *Moong ki khichhadi*, *Chawal ki kheer*, *Aate ki roti* mashed in *daal* are common food items for the weaning child. Unlike nowadays, earlier the weaning children were fed coarse grains like *maduaka* dalia, *makka* ki sabji etc.

²⁴ A statement by **Shrimati. Parvatidevi** of village **Supi**, "*Jitnakarsaktehainutnakar pate hain, jab aate-chawalkeliyepaise hi nahihonge to paushtikaahaarkahan se aega?*"

²⁵ An edible gum considered healthy and nutritious for the lactating mothers and elderlies

REFERENCES

Chimedza, DrRuvimboMabeza (2008) "Improving food security", *Footsteps 77*, December, pp. 1-3

Sahai, Suman (2009) "Agro biodiversity: Key to Food Security", *Gene News*, 4:2, March-April, pp. 2-3

Fernandez, Aloysius Prakash (2010) "Marginal and small farmers require freedom and options, not financial inclusion", *LEIS INDIA*, 12:2, June, pp. 6-8

Poole, Nigel (2008) "Promoting efficient markets", *Footsteps 77*, December, pp. 10-11

ANNEXURE

Annexure: 1- Household Interviews: Food Security in Uttarakhand

Village:	Block:	District
Name of Interviewer		
Date:		

Part I: Backgrounds

1.	Name:	
2.	Household Size	
3.	Land-Holding	
4.	Education	Last Class Completed _____
5.	Does anyone in the family work outside the home?	# of people _____ Money sent home

Part II: Food Availability and Accessibility

Section 1: Agriculture and Livestock

6.	What crops do you grow?			
	Crops	Amount of land cultivated	Avg. Yield	Stock ((Months)(include type of seed)

7.	For how many years have you cultivated these crops?
8.	Do you grow enough food for 12, 9, 6, 3, less, months?
8a	Do you grow some vegetables? Which?
8b	What else do you grow?

9	Do you have irrigation? What type?
9a	What do you do when there is little/ no rain?
10	Do you sell any crops ?
10a	Which ?
10b	Do you get a good price ?
11	What are the biggest problems with your agriculture?
11a	Do you have an idea of how to improve?
12	Do you own any animals?
12a	What do you use them for?
12b	What do you feed them?
12c	Where do you get fodder?

Section 2: Biodiversity

13.	What types of wild foods do you get from nearby? forest? For example, saag, mushrooms, tubers, vegetables? fruits?
13a,	How often do you get such foods? Daily, weekly ? monthly ? less often?
14	Do you dry or preserve any foods for lean times?
	Which foods
14a	How do you preserve?
14b	For how many months do these foods last?

Section 3: Market (Ask for each)

15	Do you buy food from the market?
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Food	Freq (weekly? Monthly? Yearly/)	Amount (at a time)	Food	Freq(weekly? Monthly? Yearly/)	Amount(at a time)
Chawal?			Sugar ?		
Gehun?			Tel?		
Daal?			Masalas?		
Marua?			Chai?		
Aloo?			Biscuits?		
Subzi?			Fruit?		
Pyaz?			Doodh?		
Lahsun?			Eggs		

16	How much do you usually spend on food in one month?
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Section 3: Social Support

17.	Do you ever lend food to others?
If YES	What do you lend?
17a,	How often do you lend food?
17b.	About how much do you lend?
18.	Do you ever borrow food from others?
If YES	What do you borrow ?
18a	How often do you borrow food?
18b	About how much do you borrow?

Section 4: Government Support

4.1: ICDS

19	Are there children from household that get food from AWC?
19a	What do children receive from the AWC? How much?
19b	Do they get it daily or not? How often?
19c	Is the AWC food good? 1. Yes 2. No 3. Average
20	Do they eat it at the AWC or bring it home? 1. Eat at AWC 2. Bring it home 3. Both
20a	If it is brought home, is it shared with others in the house? 1. Yes Who? _____ 2. No
21	Did you receive rations from the AWC during pregnancy ? while breastfeeding? 1. Yes 2. No
If NO 21a.	Why not?
21b If YES	Do you know what you are supposed to get?
21c	What did you receive?
21d	How often did you get it?
21e	Was it of good quality? 1. Yes 2. No 3. Average
22	Do you know of problems with the AWC?
22a	Do you have any ideas how to improve the AWC?

4.2: Mid-Day Meal

23	Do children in your house go to school and get a Mid day meal? _____ Children
23a	What do children get for Mid-Day Meal?

23b	Is that enough?
23c.	Do they get it every day?
23d	Is the quality of food good? 1. Yes 2. No 3. Average
24	Have you ever seen the Mid-day Meal?
25	Do you know of any problems with Mid-day Meal?
25a	Do you have any idea to improve?

4.3: PDS and Other Support Schemes

26	What colour card do you have _____ card
26a	What foods do you get with it? Quant____ Rate____ Quant____ Rate____ Is the quality good?
If NO	Why do you not have a card ?
27.	Do you know of problems with PDS shops?
27a.	Do you have suggestions to make PDS shops better?
28	[If not Antodaya card holder] Have you heard of Antodaya?
28a.	What do people get from Antodaya?
28b	Do you know anyone with an Antodaya card ?
29	Does anyone in the household use Annapoorna?

29a	Do you know what people get from Annapoorna?
29b	Do you know anyone who gets support from Annapoorna ?
30	Does anyone in the household use MNREGA?
30a	Do you know what you should get from MNREGA?
30b	Any problems you know about?
31.	Does anyone in household get Maternity Benefit?
31a	Do you know what people get from Maternity benefit?
31b	Any problems you have heard about?
32	Does anyone in household get Old-Age Pension?
32a	Do you know what people get from Old-Age Pension?
32b	Do you know anyone who gets old age pension ?

Part III. Food Utilization

Section 1: Food Consumption and Perceptions

33. What do you eat for breakfast?

Food	Quan (apprx) (ask woman)

33a. Noon?

33b. Evening?

34	How many times per day do you cook?
35.	What is your idea of nutritious foods?
35a	How often do you eat these?

36	What time of the year is the best for food? Why
36a	What do you eat then?
37	What time of the year is worst for food? Why
37a	What do you eat then?
38	Do you remember eating a food when you were a child that is no longer available?
38a	Do you know what happened to these?

Section 2: Nutrition and Health

39	Where do you get drinking water?
39a	Are there any problems with the quality of water ?
40	How do you store drinking water?
40a	Do you face any problems?
41	Do you have a toilet at home? 1. Yes 2. No
42	Does the family have problems with diarrhoea or loose motions? 1. Yes 2. No

Part IV: Current Food Stocks

43.. What do you have in the kitchen today? About how much?			
Chawal		Dal (specify)	
Subzi (specify)		Aloo	
Pyagz		Dried Saag	
Lasun		Adrak	
Tel		Masala	
Achar		Biscuits	
Namkeens		Chai	
Chini/Gur		Anything else??	

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Part V. For the woman

44. Do you feel the family gets enough food to eat?

Does the family get healthy food?

Would you like the children to get better food? Like what?

Do you always get enough food?

Do you feel you get the right kind of food?

Do you eat anything special when pregnant? Breastfeeding ?

After your last pregnancy did you breastfeed and for how long?

What do you feed the child when you stop breastfeeding.. before starting solid foods?

In the old days did babies get different food after breast milk and before solids ?

*Go to the people,
Live among them,
Learn from them,
Love them.*

*Start with what they know.
Build on what they have.*

*But of the best leaders,
When their task is accomplished,
Their work is done,
The people all remark,
'We have done it ourselves'*

Famous Chinese Proverb