

**Summer Training at
Central Himalayan Rural Action Group (CHIRAG), Uttarakhand
(April 15, 2013 - June 1, 2013)**

**LIVELIHOOD OPPORTUNITIES THROUGH DAIRY
FARMING IN NAINITAL AND BAGESHWAR DISTRICT,
UTTRAKHAND**

**By
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**Under the guidance of
Dr. Anoop Khanna**

**Post Graduate Diploma in Rural Management
2012-2014**



**Institute of Health Management Research,
Jaipur
2013**

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CERTIFICATE

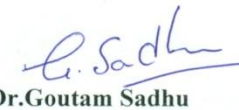
This is to certify that Mr. Manish Singh, Student of Post Graduate Diploma in Rural Management (PGDRM) from Institute Of Health Management and Research, Jaipur Batch 03 has Undergone Summer Training in Central Himalayan Rural Action Group (Chirag) and has done Study on "Livelihood Opportunities through Dairy Farming in Nainital and Bageshwar District, Uttarakhand".

The candidate has successfully carried out the mentioned studies assigned to him during Summer training from 15th April 2013 to 1st June 2013 and his approach to study has been sincere, scientific and analytical.

I wish him success in all his future endeavour.


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Date: 1st June 2013

To whomsoever it may concern

This is to certify that Manish Singh, student of IIHMR Jaipur, was an intern here at The Central Himalayan Rural Action Group (Chirag) from the 15th of April to the 1st of June 2013. During his stay here, Manish carried out a comparative study of two micro dairies that Chirag has helped set up. For the research work, Manish travelled to Kasiyalekh (Nainital District) and Devaldhar (Bageshwar District) regions and interacted with Chirag staff members and villagers. At the end of his internship, Manish presented his findings in the form of a written report and a power point presentation before Chirag staff members. His conduct here during the course of his internship was satisfactory.

Regards,

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ABBREVIATIONS

IHMR	Institute of Health Management Research
CHIRAG	Central Himalayan Rural Action Group
NRM	Natural Resource Management
D.A.R.L	Defence Agriculture Research Laboratory
I.V.R.I	Indian Veterinary Research Institute
AI	Artificial Insemination
FGDs	Focus Group Discussions
V.M.F	Veterinary Medical Facilities
C.B.M	Community-Based Management
SHG	Self Help Group
NGO	Non-Governmental Organization
AH	Animal Husbandry
AHD	Animal Husbandry Department
L.P.S	Livestock-Production Systems
SWOT	Strength, Weakness, Opportunities, Threats
A.L.V.S.D	Agar Livestock Vikas Sangh Dairy
G.P	Gestation Period
PRA	Participatory Rural Appraisal
V.P	Van-Panchayats
SC	Scheduled Caste
GoU	Government of Uttarakhand
DDP	Dairy Development Project

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CHAPTER 1: INTRODUCTION

1.1: SUMMER TRAINING

We have completed our exploratory study of village during two months summer training segment of Post Graduate course program in Rural Management offered at IHMR. For completion of the study eight villages were selected in which two villages were taken from Nainital District and rests of six villages were taken from Bageshwar District. The study objective are to survey, analyze, and document the available livelihood resources to generate income, livestock composition and their different breeds, extension services to household like cattle feed, veterinary medical facilities, A.I services and training to farmers etc.

The study had been conducted by us in two district i.e.Nainital and Bageshwar. Two villages are situated in Kasiyalekh region (Dhari block) in Nainital district, which are 90 km distance from main haldwani market, 4 km distance from nearby mukteshwar where Indian veterinary research institute(I.V.R.I) Centre are established. Main Nainital is 55 km distance from the Kasiyalekh region. Six villages i.e. Kholseer, Sainj, Tana, Pagna, Khanker, Raikholi are situated in Bageshwar District. According to Chirag six villages have been divided into two regions i.e. Kathpuriyacheena and Devaldhar.Four villages comes under Kathpuriyacheena and remaining two villages comes under Devaldhar region. Kathpuriyacheena is 17 km distance from the Bageshwar District and at the same distance from the Devaldhar region. Devaldhar region is 20 km distance from the Bageshwar district and 52 km distance from the Almora District where Defence Agriculture Research Laboratory (D.A.R.L.) are established. Main community in two Districts has been found as Arya (S.C), Bhatt and Thapa (Trival).

Most famous Badrinath temple is situated 270 km distance from the Bageshwar District.Gomati and Sarayu River merges in Bageshwar District. Valley of flower is situated nearby Badrinath Temple which is most attractive place to people.Mana is last village of Utrakhand State which is 4 km distance from Badrinath Temple from which Saraswati river is originated.

Dairy farming is important in supporting the livelihood of poor farmers. It also benefits consumers, traders and labourers etc.The greatest impact of livestock in sustainable development designed to help the poor, that through enhancement of livestock-production systems. The efficient production of milk under good hygienic conditions is the key to successful dairying. The principal constraints in smallholder systems are inadequate feeding, low genetic potential in animals and high levels of bacterial contamination leading to spoilage of milk before reaching the market.

Livelihood is a complex thing to define as in any production system there are many variables which is related to each other. Livestock sector contributes to the maximum even though the farmers those are landless can benefit out of it. Generating adequate resources and getting benefit

to meet the needs is an option for the farmers by taking the help of dairy farming as a viable option.

Introduction of better breeds, improved husbandry practices, processing and marketing of animal products often provide opportunities for enhancing income and assets at the village-level. Thereby the economic condition of the farmers goes up and overall quality of life improves.

TIME SCHEDULE OF SUMMER TRAINING

We were associated with a Chirag Foundation (Central Himalayan Rural Action Group) situated at Simayal village in Nainital District. Chirag Foundation is working towards Agriculture, health, education, community forestry, livelihood etc. in term of geographical spread.

In our 48 days study of village we stayed with five different places in which three home stay has been taken for sixteen days. The duration of 48 days of village study was spent by us for completing our exploratory study of the village.

In this report we endeavour to narrate and analyze our observations and learning during this stint in the village.

Table1: Time Schedule of Summer Training

Duration	Working	Stay	Time Interval
15 th -16 th April	Study about organization	At chirag office	02 Days
17 th -24 th April	Study about Natural Resource Management(NRM) and attending various SHG meeting at Reetha Village	At chirag office	08 Days
25 th -6 th May	Starting our project on first dairy as livelihood with survey (Sunkiya and Buribana)	Sunkiya village(Home stay)	12 Days
7 th -8 th May	Back to chirag office and Reporting to Sanjay sir	At chirag office	02 Days
9 th May	Journey to Devaldhar in Bageshwar District	Sub-office of chirag at Devaldhar	01 Day
10 th -27 th May	Starting our project on second dairy	Sub-office of chirag	18 Days

	in Bageshwar with survey (Kholseer, Sainj, Tana, Pagna, Khanker, Raikholi)	at Devaldhar with one day home stay in Kholseer	
28 th -29 th May	Discussion with area manager and field worker	Sub-office of chirag at Devaldhar	02 Days
30 th May	Back Journey to Chirag office in Nainital District	Home stay in Reetha village	01 Day
31 st -01 June	Final Reporting and Presentation to Sanjay Sir and Tanvi Mam	Home stay in Reetha village	02 Days
Total			48 Days

(Source: Self Assessment)

1.2: ORGANIZATION

1.2.1: BACKGROUND

Central Himalayan Rural Action Group (CHIRAG) is a registered society, having its headquarters in New Delhi. Six hundred kilometers of the Central Section of the Himalayan lies in the newly formed state of Uttarakhand, formerly known as the Uttarakhand region of Uttar Pradesh. With a mandate to work in this region, the Central Himalayan Rural Action Group (CHIRAG) was registered as an NGO in July 1986. CHIRAG's goal is to work towards an improved quality of life and self-reliance of rural communities, particularly among women and poorer section. To achieve this objective, CHIRAG works with local communities towards strategies that result in the sustainable and equitable use of resources. The improved management of existing resources, introduction of new and appropriate eco-friendly technologies, and an increase in awareness and capacity building of local people are strategies through which CHIRAG strives to bring about the holistic development of the region. Work began in early 1988 with a project to afforest degraded panchayat forests and a community health project in a few villages in Ramgarh and Dhari blocks of Nainital district. This initial core area quickly expanded to about 30 villages and a handful of different projects aimed at integrated development.

Today, CHIRAG's activities encompass over a hundred villages situated in all five hill blocks of Nainital District. CHIRAG works towards the integrated development of villages in hill areas through improved management and conservation of natural resources, providing access to knowledge, information and building capacity of local people .in the natural resource

management(NRM) sector, projects include social forestry, Integrated watershed programmes, water supply and sanitation, watershed development, Agriculture and horticulture development and sustainable energy programmes. In the social sector, the focus is on Education, Health, Women's empowerment (Mahila Mangal Dals), and savings and credit groups. Income generation activities include hand-spun, hand-woven and hand-knitted wool by CHIRAG-affiliated women's groups and apricot oil and scrub production. With the commissioning of a 30-bed training centre in Dhokane village in 1997, CHIRAG included training as a major thrust area to increase its influence beyond its immediate project area. Other NGOs, village-level institutions and development professionals are the target groups of CHIRAG's training programme.

CHIRAG's work over the past 15 years is a testament to the expertise it has developed in the NRM sector and has established the NGO as the premier organization in the field of community-based management of natural resources in the Kumaon region. The creation of the new state of Uttarakhand changed the status of the organization from a local to a state level NGO with new challenges and responsibilities.

“Learning by doing”

During a decade spent in development efforts, CHIRAG has adopted a methodology of “Learning by doing”, by which past efforts are improved upon to fashion pragmatic, inclusive, and vital projects to benefit the people of Uttarakhand. As a result of this process, CHIRAG has gained considerable knowledge about the people of Rural Kumaon, their livelihood, their basic needs and priorities.

An Integrated approach is essential for sustainable development. The objectives of the Natural Resource Management programme, often carried out at the level of micro watersheds, is not just to protect forests, control soil erosion and surface water runoffs, but to do it in a manner that fulfils the basic needs of the local population thereby further strengthening the links between the people and their environment. CHIRAG's approach to NRM development is based on the five “J's”-Jal(water), Jangal(Forests), Jan(people), Janwar(Animals) and Jameen(soil). All these are an integral part of any rural development efforts. ‘Women Empowerment’, for example may mean very little to a woman who spends up to eight hours a day fetching fodder, fuelwood and water. Until her burden is alleviated, through improving the availability of these resources, rural women's ability to shape the future will be limited.

Another cornerstone of CHIRAG's NRM methodology is that community mobilization and capacity building is prerequisites for the sustainable management of natural resources. CHIRAG believes that local communities' needs are best understood by the people living in these communities themselves and that local people's ownership of NRM intervention are essential for

their sustainable use. Therefore, development processes should be local, participatory and inclusive.

Knowledge ‘content’ appropriate to the local context is required for a germane planning process. This must be produced where it does not exist. The emphasis should be on simple, science based; environmentally sound methods that help reduce drudgery and increase efficiency. The tenets of an integrated approach to NRM have stood the test of CHIRAG’s 15 years of experience working in the Ramgarh and Dhari blocks of Nainital district.

Facilities at Chirag Farm

- A mother nursery with more than 20 species of medicinal plants;
- A nursery for walnut saplings: in this hail prone belt, walnut might have important commercial application;
- Hybrid and improved variety vegetable seedlings for sale to local farmers;
- Two breeding bulls were recently introduced for breed improvement;
- Free consultancy to farmers with problems related to agriculture issues;
- Demonstration of labour saving tools.

Figure: 1 Chirag Farm Nursery



(Source: Observation)

Some of the Work Carried Out By Chirag in This Period, And Their Results

- Over five million (50 lakh) tree seedlings planted in degraded lands. These had very high survival rates as a results of the social forestry programmes (plate1);
- Substantial reduction in fodder shortage in 50 villages. In many areas, a 10-15 fold increase in grass production recorded in as little as three years;
- Van-suraksha samittees (forest protection committees) and/or van-panchayats formed in all villages under the programme;
- Microplans for forest development drawn up for over 90 villages;
- Village water and sanitation committees set up in 31 villages to manage available water resources. Over 30 pipelines,32 hand-pumps and 1,500 water tanks built;
- Agriculture related activities carried out in over a hundred villages. Off-season vegetable production popularised in the area and several fruit and vegetable societies formed and linked to the National Dairy Development Board. two farmers' federations formed in Ramgarh and Bhimtal blocks of Nainital district;
- New Agriculture techniques introduced and demonstrated through the odhakhan experimental farm managed by CHIRAG for 10 years. New techniques for organic agriculture promoted;
- Twenty-two improved strain stud bulls introduced to improve local breeds. Hybrid progeny have milk yields twice as high as local strains;
- Over 1,100 bio-gas plants built in the last 10 years;
- Significant improvement in health standard from the preventive health programme,focusing on mother and child care. Twenty-eight community-based health care workers and 14 midwives(dais) supported in 32 villages of the sitla-sargakhet project area;
- Twenty-six rural libraries created;
- High quality woolen shawls and tweed produced at the CHIRAG weaving centre where local men and women are trained in the craft;
- A training centre built in Dhokane village used for capacity building of other NGOs' staff, members of various village-level institutions and CHIRAH own personnel.

1.2.2: VISION

To be a catalyst for the creation of a society rooted firmly in the principles of dignity, justice and solidarity.

1.2.3: MISSION

Chirag's mission is to improve the quality of life of rural people-especially the poor and women-in the central Himalaya. We try to do this through intervention in health, education and natural resource management, and by providing access to diversified livelihood options. We promote the sustainable ownership and management of common resources by the community.

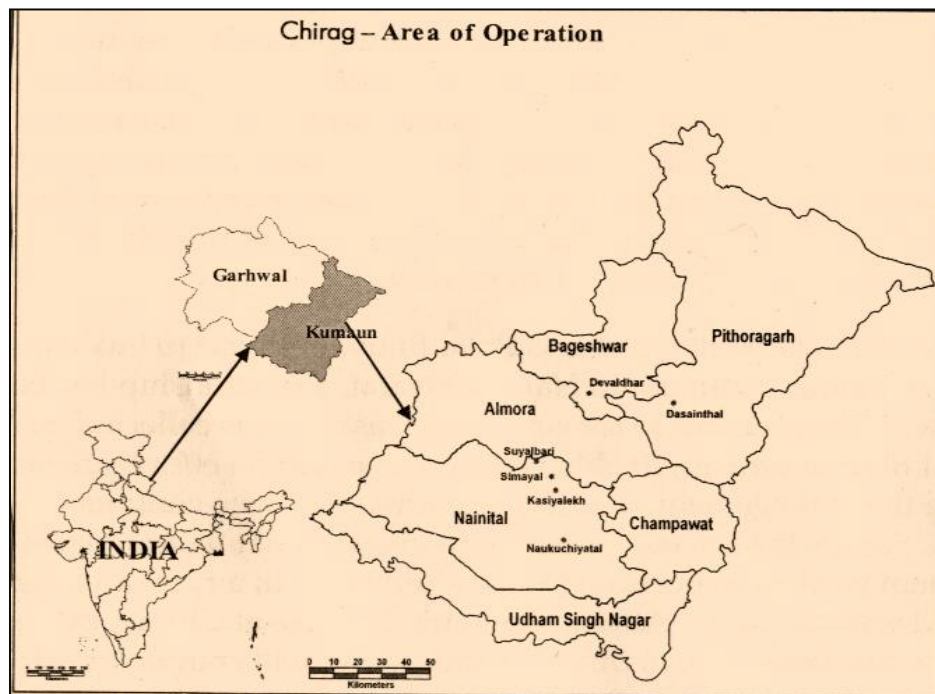
1.2.4: AREA OF OPERATION

Table2: Area Operation of Chirag

Area	District	Block	Gram Panchayat	Village
Devaldhar	Bageshwar	Bageshwar	21	32
Kathpuriyachina	Bageshwar	Bageshwar	19	28
Pinron	Nainital	Bhimtal	8	11
Naukuchiatal	Nainital	Bhimtal	15	17
Suyalbari	Nainital	Ramgarh	11	25
	Nainital	Betalghat	7	9
	Almora	Hawalbagh	4	6
	Almora	Tarikhhet	2	2
Reetha	Nainital	Ramgarh	26	35
Kasiyalekh	Nainital	Ramgarh,Dhari	17	17
	Total		130	182

(Source: Chirag Library)

Figure: 2 Chirag Operation Areas



(Source: chirag library)

CHAPTER 2: OPERATION AREA PROFILE

2.1: INTRODUCTION

Nainital District

Sunkiya village is located in the Dhari block of Nainital district in the state of Uttarakhand. It is located 19 KM towards East from District head quarters Nainital, 14 KM from Dhari, and 212 KM from State capital Dehradun. Postal head office is Bhowali. Darima (1 KM) , Nathuwakhan (3 KM) , Mukteshwar (4 KM) , Jhutiya (9 KM) , Jantwal Gaon (17 KM) are the nearby Villages to Sunkiya. Sunkiya is surrounded by Dhari Block towards South , Bhimtal Tehsil towards South , Lamgara Tehsil towards East , Nainital Tehsil towards west .Nainital , Almora , Haldwani , Champawat are the nearby Cities to Sunkiya. Hindi,Urdu,Garhwali,Kumauni are some local language here. It is located at 520 meters altitude from sea level.

Buribana village is located in the Dhari block of Nainital district in the state of Uttarakhand. It is located 21 KM towards East from District head quarters Nainital, 222 KM from State capital Dehradun. Buribana is surrounded by Okhalkanda Tehsil towards East, Bhimtal Tehsil towards west, Ramgarh Tehsil towards North, Haldwani Tehsil towards South. Haldwani, Nainital, Almora, Nagla are the nearby Cities to Buribana. Kathgodam Rail Way Station is major railway station 14 KM near to Buribana. Garhwali,Kumauni are some local language here. It is located at 520 meters altitude from sea level.

Bageshwar District

Khankar, Raikholi and Pagana villages are located in Bageshwar Tehsil in Bageshwar District of Uttarakhand State. These are located 205 KM from State capital Dehradun. Postal head office is Takula. These are surrounded by Garur Tehsil towards North, Kapkote Tehsil towards North, Hawalbag Tehsil towards South, Takula Tehsil towards South. Almora, Pithoragarh, Nainital, Champawat are the nearby Cities to these villages. Hindi is the Local Language here.

Khoulseer, Sainj and Tana villages are located in Bageshwar Tehsil in Bageshwar District of Uttarakhand State. These are located 205 KM from State capital Dehradun. Postal head office is Barechhina. These are surrounded by Garur Tehsil towards North, Kapkote Tehsil towards North, Hawalbag Tehsil towards South, Takula Tehsil towards South. Almora, Pithoragarh, Nainital, Champawat are the nearby Cities to these villages.

2.2: WEATHER AND SEASONALITY

Weather

Nainital District receives average rainfall of 1200-1500 mm. 70-80% of the rainfall is received during monsoon period i.e. June –September.

Bageshwar District receives average rainfall of 900-1100 mm.

Temperature

Nainital District

Winter (October to February) offer a chilly climate with a maximum of 15°C and minimum going below 0°C. Heavy **snowfalls** are common during winters. This is an apt time for honeymooning in Nainital.

Summer (March to May) are very pleasant with temperature never crossing 27°C and minimum is about 10°C. This is the best time for sightseeing and enjoying adventure.

Monsoon (June to September) are occasional and brings out the best of the natural beauty.

Bageshwar District

Bageshwar District summer highest day temperature is in between 21° C to 37° C.

2.3: DEMOGRAPHY PROFILE

Table 3: Demography of the Nainital and Bageshwar District

	Actual Population	Male	Female	Sex Ratio	Literates	Male Literates	Female Literates
Nainital	954,605	493,666	460,939	934	696,500	385,779	310,721
Bageshwar	259,898	124,326	135,572	1090	179,483	97,546	81,937

(Source: Census data 2011)

2.4: SEASONALITY OF THE CROPPING PATTERN

Table 4: Agricultural Pattern

S. No.	Name of the Season	Name of the Crop	Time of Sowing	Time of harvesting
1.	Kharif	Maize	May -June	Sept.-Oct.
		Millet(jao)	Oct.- Nov.	Sept.- Oct.
		Soyabean	May –June	Sept.-Oct.
		Rice	May –June	Sept.-Oct.
2.	Rabi	Wheat	Nov.- Dec.	April- May
		Rajma	May-June	September
		Madua	May-June	Sept.-Oct.
		Masoor	Oct.- Nov.	April –May
		Methi	Nov. –Dec.	April –May

(Source: Interview with the villagers)

Table 5: Vegetables Pattern

S.No	Name of Vegetables	Time of Sowing	Time of harvesting
1	Tomato	Jan.-Feb.	April - May
2	Onion	Dec. – Jan.	June
3	Garlic	Sep. – Oct.	May
4	Ginger	May –June	Oct. – Nov.
5	Green chili	May –June	October
6	Capsicum	March – April	Aug. – Sep.
7	Cauliflower	Sep. - Oct.	Jan. – Feb.
8	Cabbage	Sep. - Oct.	Jan. – Feb.

9	Peas	Dec. –Jan.	April
10	Brinjal	March – April	Aug. – Sep.
11	Carrot	Sep. –Oct.	Jan. – Feb.
12	Radish	May- June	Sep. – Oct.
13	Okra (Lady finger)	July	Oct. – Nov.
14	French beans	April	June – July

(Source: Interview with the villagers)

2.5: SELF HELP GROUP (SHG)

Table 6: SHG's at the village

S.No	Name of SHG	Village Name	Date of Meeting	Members
1	Shanti Kisan Club	Sural village	17-4-13	07
2	Pragti Samiti	Simayal village	18-4-13	07
3	Safal Group	Nathukhan	19-4-13	05
4	Shanti Shyam SHG	Harinagar	19-4-13	09
5	Saraswati Sankalp SHG	Sunkiya	21-4-13	22
6	Jagrati Mahila Vikas Pragti	Buribana	22-4-13	29

(Source: Interviews with the females)

Shanti Kisan Club

Discussion:-

- The discussion was started in relation to the income expenditure.
- In the second discussion about poultry the women were given knowledge about the Kyler species.
- Then it was discussed about how these people can get a subsidy on cattle feed if they get a membership card. (Actual amount was Rs. 175/5kg in case if they get a membership card the cattle feed will be of Rs.170/5kg).

- SHG's gave work to the women to collect Pural leaves which were used in the making of the coal. 1 Rs. was given per kg for the collection by the SHG's.
- SHG' also gave information about the herbal plants which the women in the villages could grow like Mint, Roseberry, Thyme, Auregayn etc. as a source of livelihood.

Figure: 3 SHG Meeting at Sural village



(Source: Observation)

Pragti Samiti

Discussion:-

- The women farmers were provided seeds of vegetables like Capsicum, Tomato and Chilly which due to the heavy snow and rainfall was destroyed. So the discussion took place if they should be provided seeds or what are the other alternatives that can be considered.

Safal Group

Discussion:-

- Agriculture related discussion took place in order to know the progress of the vegetables grown.
- Cattle feed distribution.
- Herbs related discussion.
- Membership in federation.

- In order to generate income of the villagers they were motivated to sell milk for 1-2 lt. per day.

Shanti Shyam SHG

Discussion:-

- Discussion on Income and Expenditure of the Samiti took place.
- The villagers were given knowledge about how they should get their animals insured from the TATA AIG. In this Rs.655 will be paid by the farmers for 3 years.

Figure: 4 SHG Meeting at Harinagar village



(Source: Observation)

Saraswati Sankalp SHG

Discussion:-

- Discussion about peas was given wherein they were asked how much collection of peas can take place by per women and then accordingly the marketing will be decided and what will be the price for the market. They were told by the SHG's that they will be purchase their peas in Rs.25/kg.

Jagrati Mahila Vikas Pragti

Discussion:-

- Discussion on Income and Expenditure took place.
- Second discussion was carried out on information about the vegetable seeds.

2.6: GREENHOUSE CULTIVATION

Greenhouses are frames of inflated structure covered with a transparent material in which crops are grown under controlled environment conditions. Greenhouse cultivation as well as other modes of controlled environment cultivation has been evolved to create favorable micro-climates, which favours the crop production could be possible all through the year or part of the year as required. Greenhouses and other technologies for controlled environment plant production are associated with the off-season production of ornamentals and foods of high value in cold climate areas where outdoor production is not possible. The primary environmental parameter traditionally controlled is temperature, usually providing heat to overcome extreme cold conditions. However, environmental control can also include cooling to mitigate excessive temperatures, light control either shading or adding supplemental light, carbon dioxide levels, relative humidity, water, plant nutrients and pest control.

Structure

Medium-tech greenhouse is constructed using galvanized iron (G.I) pipes. The canopy cover is attached with structure with the help of screws. Whole structure is firmly fixed with the ground to withstand the disturbance against wind. Exhaust fans with thermostat are provided to control the temperature. Evaporative cooling pads and misting arrangements are also made to maintain a favorable humidity inside the greenhouse. As these systems are semi-automatic, hence, require a lot of attention and care, and it is very difficult and cumbersome to maintain uniform environment throughout the cropping period. These greenhouses are suitable for dry and composite climatic zones.

Figure: 5 Lilium Cultivation in the Polyhouse



(Source: observation)

Size of Farm: - 24*24 square feet

Temperature: - 25-30 degree Celsius

Prize: - @ 25-30 Rs. /stick

Cultivation time:-May to July (Three months)

Marketing: - Delhi and Lakhnau through Haldwani Mandi

Advantages of containers in greenhouse production

- Increase in production capacity by reducing crop time.
- High quality of the greenhouse product.
- Uniformity in plant growth with good vigour.

- Provide quick take off with little or no transplanting shock.
- Easy maintenance of sanitation in greenhouse.
- Easy to handle, grade and shift or for transportation.
- Better water drainage and aeration in pot media.
- Easy to monitor chemical characteristics and plant nutrition with advanced irrigation systems like drips.

2.7: CATTLE FEED

AIM

- To improve the milk production in the villages.
- To give proper nutrients to the animals for better health.

COMPOSITION

Table 7: Ingredients of Cattle Feed

	In (Kg)	In (%)
Maize	30	80
Choker	07	68
Khali of Mustard	07	78
Rice	03	21.33
Jo	08	75
Madera	20	80
Soya bean	15	47
Udaid Pulses	05	16
Salt	03	-
Mineral Mixer	02	- (with water)
Total	100 kg	-

(Source: Observation)

Figure: 6 Formations of Cattle feed by Cooperative Society



(Source: Observation)

Observation:-Paucity of fodder is prominent problem in the hilly area, in these situation cattle feed was prepared by the cooperative society supported by chirag. Only women were contributing their efforts for all the activity and marketed by the chirag dairy only for the milk suppliers farmers at @ 175Rs. /5kg bag. Only 1/4th of sampled household were using cattle feed. Reason behind this was found that some farmers complained that Khali of Mustard was generating heat in the body of animal so they were not favour to purchase this while some were unable to purchase this due to more prizes.

2.8: GENDER CLOCK

Table 8:- Daily Routine Activities of the villagers

Time	Work distribution of female	Work distribution of male	Time interval
Start from 5:00am	Morning Wake-up	Wake-up	-----
5:00-5:30am	Go to toilet and wash hand, mouth	Go to toilet, wash hand, mouth and brush teeth	½ hours
5:30-6:00am	Fill the water in the Pot	Go to field/farm for inspection	½ hours
6:00-6:30am	Make tea, take and cleaning house, cleaning utensils	Have tea	½ hours
6:30-7:00am	Take animals for grazing, milk animals.	Take animals for grazing, milk animals.	½ hours
7:00-7:30am	Preparing breakfast, Serving food to children	Take bath, breakfast and go to work/ farm.	½ hours
7:30-10:30am	Doing ploughing in the farm and take grass	Farm/ labour work	3 hours
10:30-11:30am	Giving water and fodder for the animals and take for bath	Continue farm work	1 hours
11:30-2:00pm	Preparing lunch,take,cleaning thali and bowels'	Take lunch	2½ hours
2:00-2:30pm	Take rest	Take rest	½ hours
2:30-3:00pm	Make tea and take	Get fresh, have tea	½ hours
3:00-6:30pm	Doing ploughing again in the farm, Bringing water	Doing farm work again	3½ hours
6:30-7:30pm	Tie the animals outside, giving fodder, cut the vegetables, take milching process	Come back from farm Entertainment with children	1 hours
7:30-9:00pm	Cooking, take food and give to children	Take dinner	1½ hours
9:00-9:30pm	Tie animals inside and giving fodder	Help in tie and fodder	½ hours
9:30pm-5:00am	Night Rest(sleep)	Night Rest(sleep)	7½ hours

(Source: Informal Interview and Observation)

2.9: SWOT ANALYSIS OF THE VILLAGES SURVEY

Table 9: SWOT Analysis

Strength	Weakness
• Sufficient Land(Nali) • Fodder availability for livestock • Availability of woods for fuel from forest • Nuclear Family	• Lack of financial assistance • Lack of Awareness about extension services • Transportation problem • Poor marketing linkages • Lack of knowledge about new technology(Fodder harvesting Machine)
• Dairy farming • Chirah initiative • Demand for Lilium flower agriculture • Demand for horticulture • Presence of Haldwani market • Expertness for adventure work at hilly areas	• Job Insecurity • Natural calamities
Opportunities	Threats

(Source: Observation)

2.10: PROBLEM FACED DURING THE SURVEY

Agriculture

- Lack of availability of certified seed.
- Lack of timely availability of fertilisers and plant protection chemicals.
- Inadequate technical know-how of various agriculture operations.

- Lack of soil testing facilities.
- Poor marketing linkages.
- Lack of irrigation facilities.

Horticulture

- Lack of availability of good quality stock of fruit trees.
- Lack of timely availability of plant protection chemicals.
- Lack of technical expertise.
- Poor marketing linkages, especially for high value perishable crops.

2.11: FUTURE SUGGESTION

- A paucity of water exists in the hills and agriculture productivity in most areas is dependent on the vagaries of the monsoon rains. So there is a requirement for a detailed and systematically planned approach to the problem of water harvesting and conservation. This does not mean investing in a single or a few large projects, but rather a series of smaller localised projects directed to the specific needs of a village.
- Marketing remains a major bottleneck. So a planned and sustained marketing strategy is essential. The overall issues need a consolidated approach to “market chain” factors which must include storage, transport, and advertising, ready financing and rapid access to and availability of current main market (mandi) prices.
- These two important issues of water and marketing are the “head and tail” of sustained agriculture growth and of profitability to the farmer and the economy.

CHAPTER 3: DAIRY FARMING PROFILE

3.1: HISTORY OF DAIRY

To see the livelihood opportunities in dairy farming chirag had established a dairy in 3rd April, 2010 and for this a sangh was invented during 28th February, 2009. first of all through FLDP Programme SHG's were made from four villages named as Buribana, Kokilana, Sunkiya and Choktha. total fifteen SHG's were made during this period. After this a sangh was invented for these SHG's and decided that ghee should be made in the dairy from the cream. After this decision a milk collection centre had established in buribana village and many sub-centre were opened in nearby villages and a candidate was appointed from the village at the collection centre by the women's of village. Commission of the candidate at collection centre was fixed as 50 paisa/liter and 1Rs. /liter for middle man. During this period villagers were faced many problem because distance of the villages were more from the collection centre so finally decided that only two villages sunkiya and Buribana will be included in this.

Anchal dairy was already set-up in the buribana village so competition between SHG dairy and anchal became more. Faith of people's towards anchal was more because it was government registered dairy and was given extension services to household like cattle feed, veterinary medical facilities, A.I services, training to farmers, prize more and on-time etc behind this SHG dairy was unable to provide all of these facilities. under these situation collection of milk became less day to day in the dairy and finally they decided that dairy should be shifted from buribana to sunkiya since milk from two villages were collected in sunkiya dairy named as **Agar Livestock Vikas Sangh Dairy**.

During the visit of dairy we have found that Herra Dangwal and Kamla Devi were present employee and were getting 1 and 0.50 Rs. /liter respectively as commission and 800Rs. /month salary from chirag SHG dairy. Prizes were given on the basis of fat in the milk checked by milk analyzer machine (Milkana Kam 98-2A) to the villagers but receipts were not given to the farmers. They were liable to pay 3Rs. /liter for transportation cost because they don't have their own vehicle. Milk was marketed after extracting cream from cow milk and mixes buffalo milk in extracted milk. Present status of dairy was found behind expectation because only 50-54 liter milk was collected per day after three year. Dairy was found profitable only by sell of ghee and milk but in loss by sell of paneer. paneer was made by adding citric acid in hot milk, filter from cloth and then press solid on cloth and finally kept for 15-20min. 10-12kg milk are necessary to made 1kg paneer. Dairy was enable to provide only cattle feed to the villagers at @175Rs. /10kg bag and 5Rs. subsidy for taking membership of dairy.

Second dairy was set-up in February, 2013 named as **Shree Jaagnath Dairy Kathpuriya Cheena** in Bageshwar district and present status was found beyond expectation. Demand of milk in the market was very high than supply. Profit of dairy was found more than sunkiya dairy

because they were concentrating on supply of milk, curd, and mattha instead of paneer. second reason behind success of dairy was that no competitor was present here so they can do explosive growth at this time with good reputation in the market. Testing facilities was not available in the dairy because it has been done already at collection centre in the villages.

Figure: 7 Quality Analyses and Marketing of Milk



Agar Livestock Vikas Sangh Dairy



Shree Jaagnath Dairy Kathpuriya Cheena

(Source: Observation)

3.2: OBJECTIVES

The objectives of the study were as follows:

- To analyze the Socio-Economic status of farmers, through dairy farming supported by Chirag SHG.
- To find out the support of forward and backward integration to maximize the milk production.
- To find out the role of Women and men in dairy farming activities.
- To find out the health status of livestock by promoting better management practices, access and availability of improved nutrition, community based care of livestock.
- To find out the no. of stakeholder (%) engaged in A.I services to get better quality breed for Milk production.

3.3: SCOPE

- The first study was confined to the District of Nainital with special concentration on the area around sunkiya, Buribana village.
- The second study was confined to the District of Bageshwar with special concentration On villages coming under the katpuriya cheena (4) and devaldhar (2) region.

3.4: RATIONALE

- The need for this exploratory study for us is to understand and experience the rural exposure to determine the present status, resource gaps and correlate all the theoretical knowledge with the field exposure.
- Uttarakhand is a hilly area where livelihood resources are limited. At this situation most of farmers are depended on agriculture and horticulture which are seasonable and depends on climate. Climate of Uttarakhand changeable every times so these livelihood resources are confronted with many problems like i.e. Lack of adoption of improved technology, Snow fall, Defective storage and marketing facilities, Inadequate transport amenities, Insufficient credit availability etc. So dairy farming will be a catalyst for the livelihood source of farmers. Dairy farming will be enable to increase the farmers income, employment, productivity, social status and improved living standards of sample farmers as well as their motivation towards education, health issues, women empowerment, SHG formations, corporation among farmers, market linkage, fodder development, quality of milk etc.
- Nainital and Bageshwar District is selected for the study because many villages are connected with these district where livestock composition are more and likelihood of milk production are better than others areas. Demand of milk in nearby market is more than others.

3.5: METHODOLOGY

3.5.1: Data Collection

Primary Data Collection

Multi-Stage Random sampling was used. Primary data was collected by the survey method. For this a structured (closed) schedule was used for the purpose of the survey (see Annexure 7 for schedule). The schedule includes questions on cattle's, their breed, cattle feed, Artificial insemination (A.I Services), production of milk and earning from sale of milk etc. A sample size of 260 household who have at least one milch animal were sampled. Both quantities and

qualitative research were carried out. Quantitative research was done through structured schedule. Qualitative research was carried out through in-depth interviews, group discussions.

Secondary Data Collection

The secondary data collected to know the scenario. For secondary data collection various journals, article papers and net surfing were done. For this purpose the Library of Indian Veterinary Research Institute (I.V.R.I) Mukteshwar were visited.

Apart from the above, some experts were also consulted to get their opinion on the technicalities involved in household level dairy farming in high altitude areas.

3.5.2: Study Area

To complete the study eight villages were selected from two districts. In the selected districts two dairies were found named as Agar livestock Vikas Sangh Dairy and shree jaagnath dairy.

Agar livestock Vikas Sangh Dairy

District: Nainital

Block: Dhari

Villages: Sunkiya and Buribana

Shree Jaagnath Dairy

District: Bageshwar

Block: Bageshwar

Tehsil: Bageshwar

Villages: katpuriya cheena (Kholseer, Pagna, Sainj, Tana) and devaldhar (Khanker, Raikholi).

3.5.3: Sample Size

For collecting data following samples sizes were used for the study purpose.

For Survey: 260 household (from selected eight villages)

For In-depth Interviews: SHG Dairy members and area manager of CHIRAG.

3.5.4: Sampling Method

Systematic Multi-stage Random Sampling was used for schedule survey. **260 household** were selected randomly which became sample size for the farmer's profile study. Efforts were made to collect different information regarding social and economical status of the villagers from all caste and economic group. Convenient method refers to the collection of information from members of the population who are conveniently available at that spot to provide information regarding research questions. For the sample selection a simple criteria was also decided that each respondent should have **at least one milch animal**.

3.5.5: Data Analysis

Both Qualitative and Quantitative methods are used to analyze data. The primary data collected through schedule, analyzed by both Qualitative and Quantitative method. Statistical tools like tables, bar charts, averages, percentages etc. were used to analyze the data collected on various things like collection of milk in the dairy, Different categories of milk suppliers, Net profit during 2012-13, per month women income from dairy etc.

3.6: LIMITATION/ASSUMPTIONS

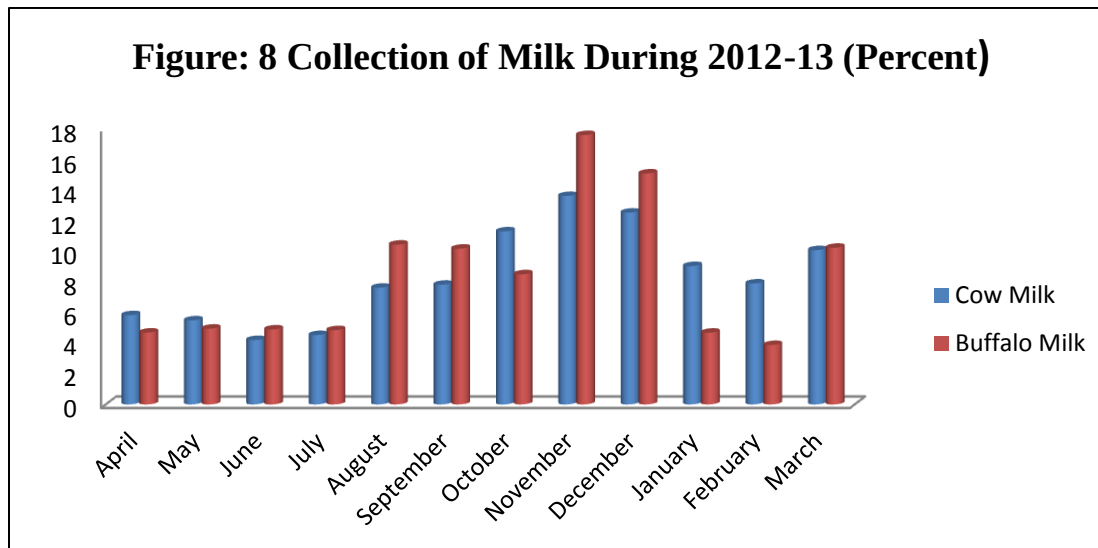
- As the schedule was a comprehensive one, covering areas of cattle, their breed, cattle feed, A.I services etc. not all aspects of animal husbandry were covered.
- People were not aware about the cross-section of breed, better quality of seed, long life-span grass.
- Space availability for the cattle at the household level has been assumed to be adequate as almost every household has encroached on extra land in the area. But due to the lack of fodder in that area farmers were found with less no. of cattle's (especially cows and buffaloes) for milk production.

3.7: FINDINGS

The major findings of the study were as follows:

3.7.1 General Statistics of Dairy

3.7.1.1 Collection of Milk during 2012-13

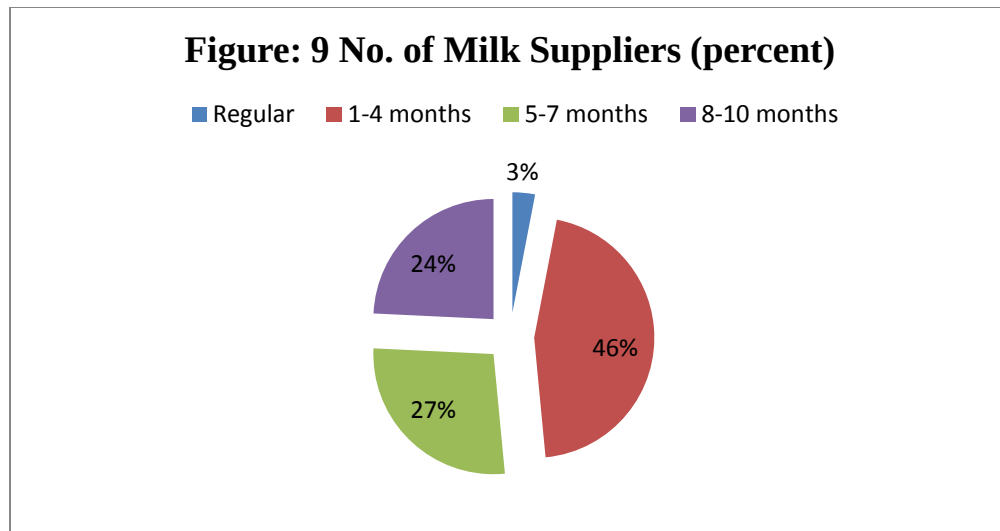


(Source: Chirag SHG)

Figure 1 shows the annual collection of milk month wise and from the figure it is easily depicted that cow's milk was collected minimum as 4.20% in June and Maximum as 13.61% in November while buffaloes milk was collected minimum as 3.88% in February and Maximum as 17.6% in November month. Some reasons behind maximum collection of milk during November were found as:-

- During the winter season sweating becomes low due to low temperature of environment.
- During these months animals completed their gestation period.
- During these months green grass are easily available for animals because grass are grown after rainy season.
- Digestion is better during these days.
- Body enzymes worked faster than summer.

3.7.1.2 Milk Suppliers Categories

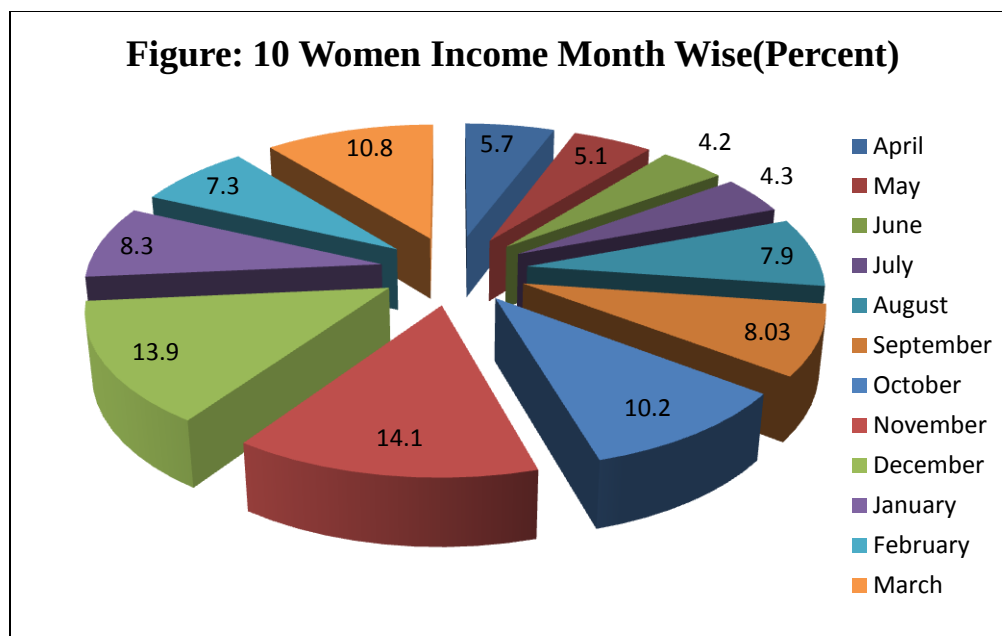


(Source: By survey method)

Figure 2 shows the different categories of milk suppliers in the dairy and from the figure it is easily depicted that only 3% suppliers were found regular while three categories has been found out in which 24% suppliers were giving milk from 8-10 months, 27% suppliers were giving milk from 5-7 months and rest of 46% suppliers were giving milk from 1-4 months.

3.7.2 Socio Economic Pattern of the Farmers

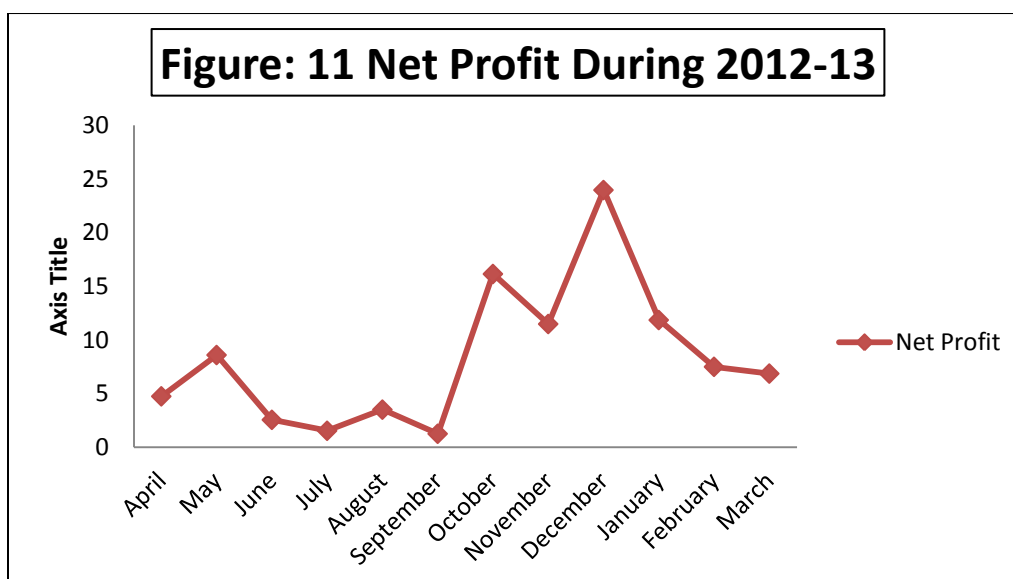
3.7.2.1 Women Income Month Wise from the Dairy



(Source: Chirag SHG)

Figure 3 shows the women income month wise from the SHG dairy and from the figure it is easily depicted that women income were found minimum as 4.2% (Rs 8144.53) in June month while maximum in November month as 14.1% (Rs.27491.28).reason behind this was that collection of milk during November month was highest so income will be proportional.

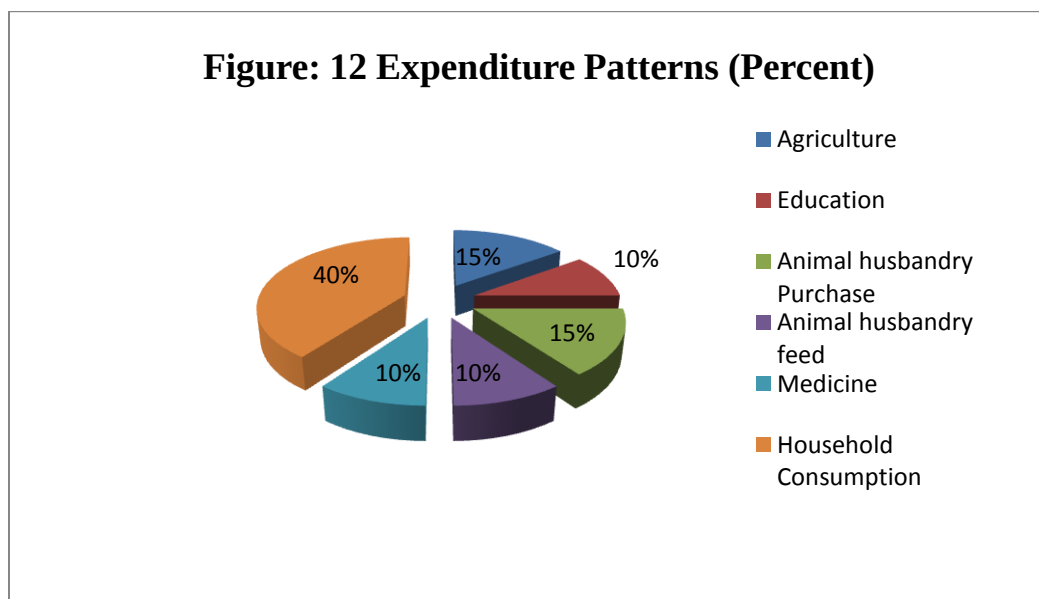
3.7.2.2 Net Profit of the Dairy



(Source: Chirag SHG)

Figure 4 shows the net profit of the **Agar Livestock Vikas Sangh Dairy** in Nainital District and from the figure it is easily depicted that profit was found minimum as 1.25%(Rs.400.03) in September month while maximum in December as 23.96%(Rs.7666.66).maximum profit in December was due to 1) Highest difference in income and expenditure of the dairy.2) More income from the sale of ghee (40.0kg).

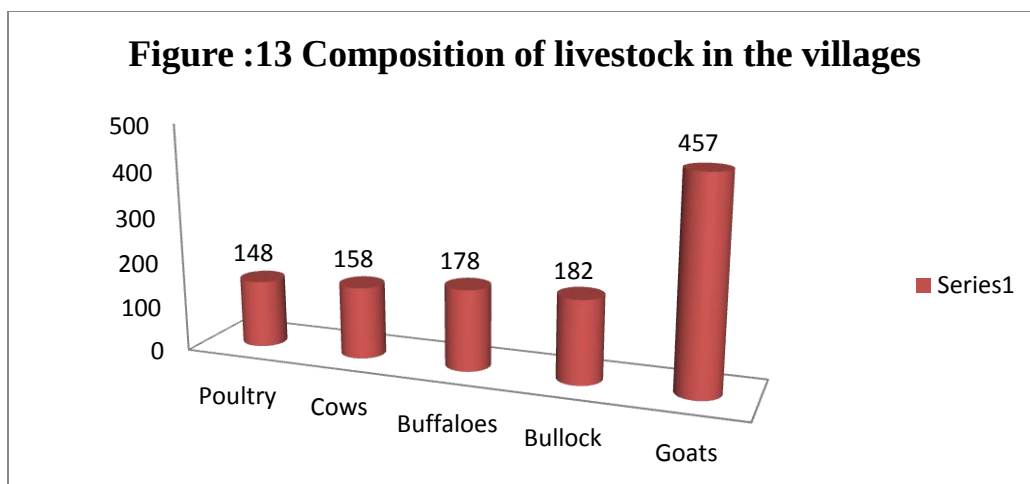
3.7.2.3 Expenditure Pattern of Farmer's



(Source: Questionnaire)

Figure 5 shows the expenditure pattern of the farmer's, from the figure it is easily depicted that household consumption of the villagers enroll high expenditure of 40%, 15% expenditure is entailed by agricultural expenses; villagers spend 10% money on education for the children's, 15% money on animal husbandry purchase, 10% money on animal husbandry feed While the rest 10% on medicine for animal and children.

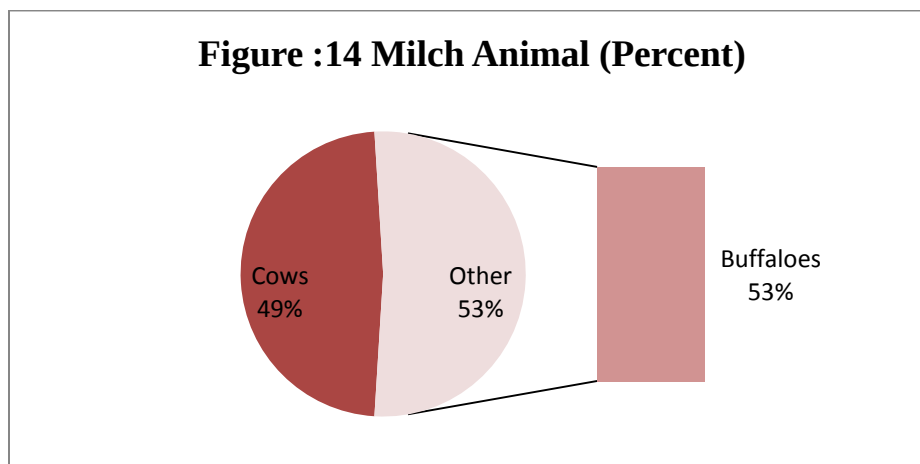
3.7.3 Livestock composition



(Source: Questionnaire)

Figure 6 suggests that villagers are keeping goats in their homes in large number to earn income from them, i.e. when they are in immediate cash need. Cow, Buffaloes are usually kept by the villagers to sell milk in the Dairy or to local market to generate income. Bullock is kept by the villagers for ploughing activities of the farm.

3.7.4 Milch Animal

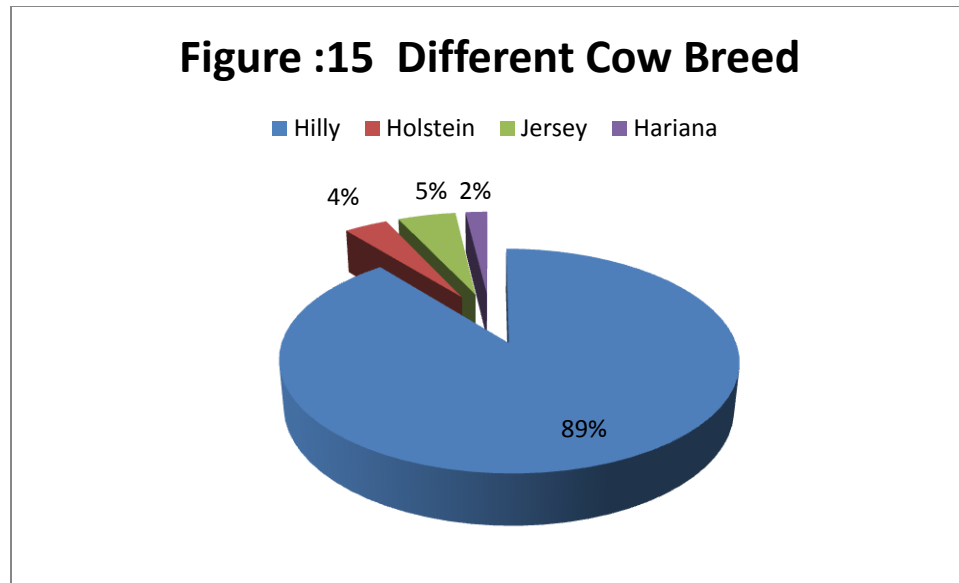


(Source: Questionnaire)

Figure 7 shows the milch animal in the villages from which farmers can get employment. From the figure it is easily depicted that only 49% cows out of total (158) were enrolled as milch animal while 53% Buffaloes out of total (178) were enrolled as milch animal.

Reason behind less no. of milch animal was found that most of animal were with gestation period.

3.7.5 Different Breeds of Animal



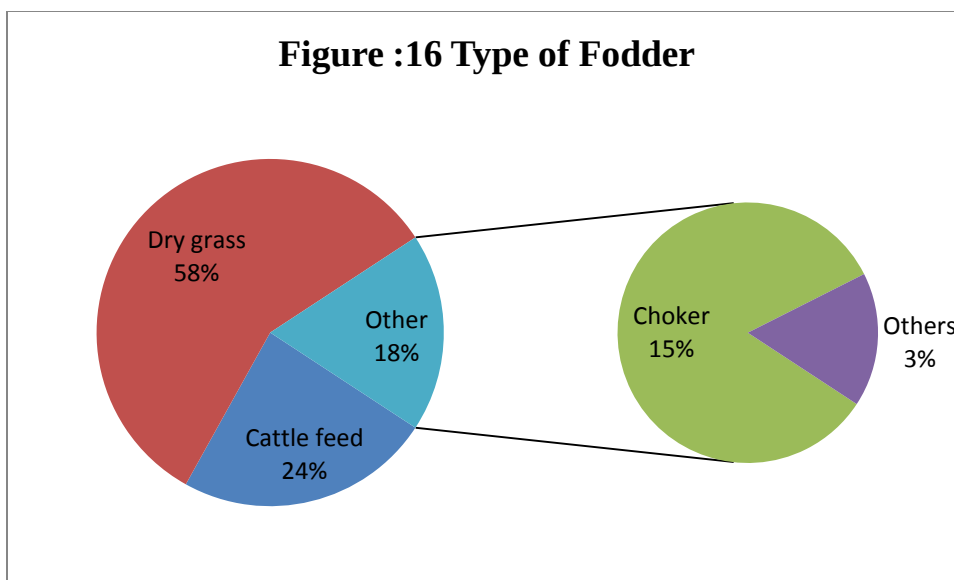
(Source: Questionnaire)

Figure 8 shows the different breeds of cows. From the figure it is clearly depicted that 89% cows were enrolled as hilly, 4% Holstein, 5% Jersey, and rest of 2% cows were enrolled as Haryana in the hilly areas. Jersey cow are enable to give more milk than the rest of breed but villagers were found unable to purchase this breed due to less money and information about this.

3.7.6 Type and Source of Fodder

3.7.6.1 Type of Fodder

Figure :16 Type of Fodder

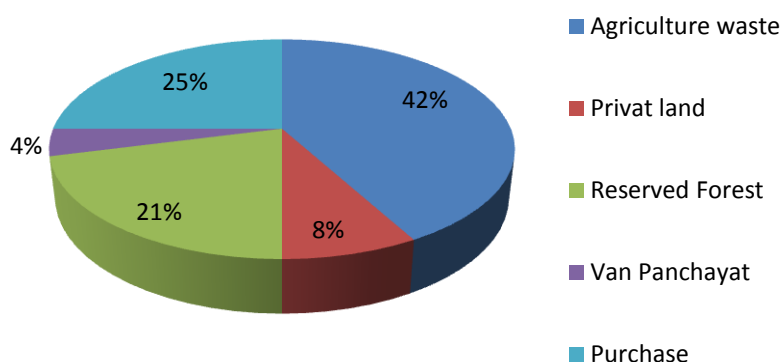


(Source: Questionnaire)

Figure 10 shows the different fodder type which are used for animals feed. From the figure it is clearly depicted that most of household (58%) out of 260 were using dry grass for their animal, 24% household were using cattle feed, 15% household were using choker while rest of 3% household were using Dhan, wheat, Maize etc. for their animals. some household complained that khali of Mustard generate more heating in the animal body so they were prefer less cattle feed.

3.7.6.2 Source of Fodder

Figure :17 Source of Fodder



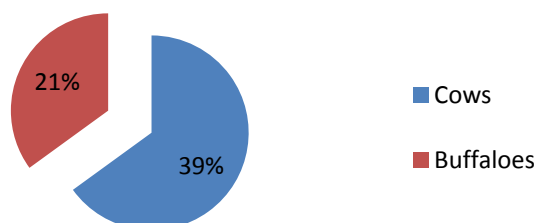
(Source: Chirag Report)

Figure 11 shows the different source of fodder from which farmers can get easily. From the figure it is clearly depicted that most of fodder (42%) are collected from Agriculture waste (approximately for five months), 8% from private land (for one month), 21% from reserved forest (for two and half month), 4% from Van panchayat (for fifteen days) and 25% fodder are purchased by the farmers at @Rs.800-1200 per loot (One loot have 12-15 gatha, one gatha equal to 35 kg).

3.7.7 Para-Vet Services

3.7.7.1 Artificial Insemination services

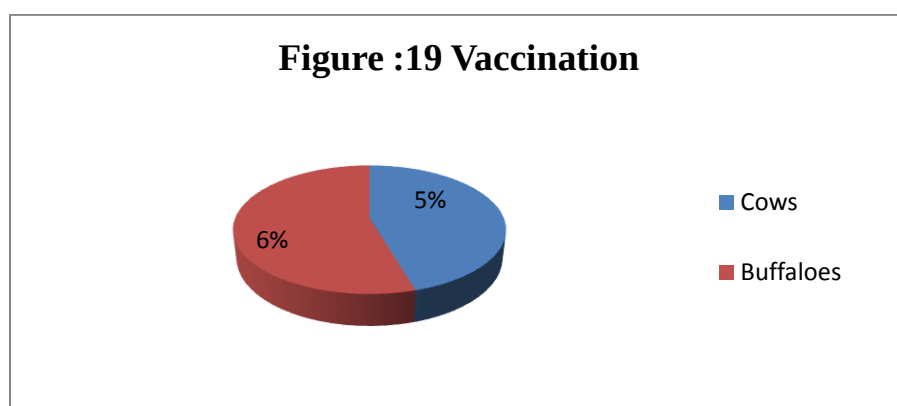
Figure :18 Artificial Insemination



(Source: Questionnaire)

Figure 12 shows the A.I services of the animals and from the figure it is clearly depicted that only 39% cows (61) were enrolled for A.I services while 21% buffaloes (37) were enrolled for A.I services out of 158 and 178 respectively. Some farmers complained that A.I services are successes after three or four times so they were believed less on this service.

3.7.7.2 Vaccination Services



(Source: Interviews with the villagers)

Figure 13 shows vaccination of the animal. From the figure it is clearly depicted that only 5% cows were found vaccinated while 6% buffaloes were found vaccinated. Less ratio of vaccination was found due to absence of veterinary doctors in the hilly areas.

3.7.8 Income and Expenditure Pattern of Dairy

3.7.8.1: Agar Livestock Vikas Sangh Dairy

Table 10: Income and Expenditure Pattern of Agar Livestock Vikas Sangh Dairy

Agar Livestock Vikas Sangh Dairy(Income) 2012-13

S. NO	Month	Sale of Milk (1)							Curd Sale(2)		Paneer Sale(3)		Ghee Sale(4)	
		Odakhan	@Rs. 28	Bhatli ya	@Rs. 26	Aadya	@ Rs. 28	Total Rs.	Kg.	@Rs. 45	Kg.	@Rs. 200	Kg.	@Rs. 360
1	April	442.5	12390	-	-	-	-	12390	-	-	10	2000	10.8	3880
2	May	417.5	11690	-	-	26	728	12448	1.5	63	7.6	1520	11.8	4248
3	June	335	9380	-	-	26	728	10108	-	-	6.00	1200	7.7	2775
4	July	346.8	9710.4	-	-	15	420	10130.4	-	-	7.9	1580	10.2	3672
5	Aug.	406.2	11373.6	244	6344	25	700	18417.6	-	-	13.5	2700	13.7	4932
6	Sept.	340.5	9534	315	8190	25	700	18424	-	-	13.8	2760	8.0	2880
7	Oct.	371	10388	365	9490	26	728	20606	24	1080	20.8	4160	22.9	8244
8	Nov.	344	9632	619	16094	25	700	26426	12.5	562.5	48.1	9620	12.0	4320
9	Dec.	456	12768	298	7748	25	700	21216	-	-	29.15	5830	40.0	14400
10	Jan.	379.8	10634.4	366	9516	26	728	20878.4	-	-	-	-	18.8	6768
11	Feb.	350	9800	274	7124	-	-	16924	-	-	3.00	600	11.2	4032
12	March	365	10220	300	7800	-	-	18020	-	-	18.7	3740	19.3	6912

Agar Livestock Vikas Sangh Dairy(Expenditure) 2012-13									
S.NO.	Month	Purchase of Milk		Expenditure				Total Expenditure	Total Expenditure
		Milk(Qty.)	Total Rs.(A)	Transportation Rs.	Room Rent @Rs.400	Honorium to saler@Rs.150+1600	Others	Total Rs.(B)	(A+B)
1	April	533.6	11164.73	2670	400	2400.4	117	5587.4	16752.13
2	May	512.5	9841.26	2674	400	2368.75	215	5657.75	15499.01
3	June	413.9	8144.53	2344	400	2220.85	155	5119.85	13264.38
4	July	437.6	8455.63	2347.2	400	2256.4	1431	6434.6	14890.23
5	Aug.	780	15455.39	2704	400	2770	3600	9474	24929.39
6	Sept.	789.8	15607.27	2722	400	2784.7	2150	8056.7	23663.97
7	Oct.	1022.5	19911.58	3048	400	3133.75	2430	9011.75	28923.33
8	Nov.	1373	27491.28	3952	400	3659.5	1750	9761.5	37252.78
9	Dec.	1242.1	27029.19	2337	400	3463.15	550	6750.15	33779.34
10	Jan.	777.6	16072.4	2315.4	400	2766.4	2300	7781.8	23854.2
11	Feb.	675.6	14124.21	1872	400	2613.4	150	5035.4	19159.61
12	March	963.3	20935.96	1995	400	3044.95	100	5539.95	26475.91

(Source: Chirag SHG Dairy)

Table 11: Net Profit of Dairy

Net Profit During 2012-13					
S.NO	Months	Income(1+2+3+4)	Expenditure(A+B)	Net Profit	Net Profit (%)
1	April	18270	16752.13	1517.87	4.74
2	May	18249	15499.01	2749.99	8.59
3	June	14083	13264.38	818.62	2.55
4	July	15382.4	14890.23	492.17	1.53
5	August	26049.6	24929.39	1120.21	3.5
6	September	24064	23663.97	400.03	1.25
7	October	34090	28923.33	5166.67	16.14
8	November	40928.5	37252.78	3675.72	11.48
9	December	41446	33779.34	7666.66	23.96
10	January	27646.4	23854.2	3792.2	11.85
11	February	21556	19159.61	2396.39	7.49
12	March	28672	26475.91	2196.09	6.86
	Total Net Profit			31992.62	

(Source: Chirag SHG Dairy)**3.7.8.2: Shree Jaagnath Dairy Kathpuriya Cheena**

Table 12: Income and Expenditure Pattern of Shree Jaagnath Dairy Kathpuriya Cheena

Shree Jaagnath Dairy Kathpuriya Cheena (Income/Expenditure) February 2013									
S.NO.	Income					Expenditure			
	Items	Qty.	@Rs.	Total		Items	Qty.	@Rs.	Total
1	Milk Sale	1403.1	35	49158.75		Milk Purchase	1475.05	26	38351.3
2	Curd Sale	48.2	50	2410		Milk Purchase	3	30	90
3	Mattha Sale	-	-	-		Total			38441
4	Paneer Sale	0.200	250	50		Salary Secretary	1475	1	1475
	Total			51618.75		Transportation charges	1475	2	2950
	Extra			1134.25		Salary for seller	1478	1	1478
						Electricity	1	500	500
						Shop Rent	1	1800	1800
						Commission for SHG	Bank	482	482
	Total			52753		Total			47126

(Source: Chirag SHG Dairy)

Shree Jaagnath Dairy Kathpuriya Cheena (Income/Expenditure) March 2013								
S.NO.	Income				Expenditure			
	Items	Qty.	@Rs.	Total	Items	Qty.	@Rs.	Total
1	Milk Sale	2391.3	35	83695.5	Milk Purchase	2592.95	26	67416.7
2	Curd Sale	22.68	50	1134	Maththa Purchase	29	8	232
3	Curd Sale	133.325	40	5333	Total			67648.7
4	Mattha Sale	91.9833	15	1379.75	Salary Secretary	2592.95	1	2592.95
5	Paneer Sale	1	300	300	Transportation charges	2592.95	2	5185.9
	Total			91842.25	Electricity	1	500	500
	Extra			139.75	Salary for seller	2592.95	1	2592.95
					Shop Rent	1	1800	1800
					Commission for SHG		550	550
					Pankha Mathani			2350
					Extra	1		450
	Total			91982	Total			83670.5

Shree Jaagnath Dairy Kathpuriya Cheena (Income/Expenditure)April 2013									
S.NO.	Income					Expenditure			
	Items	Qty.	@Rs.	Total		Items	Qty.	@Rs.	Total
1	Milk Sale	2644.69	35	92564.2		Milk Purchase	2496.8	26	64915.5
2	Curd Sale	31.5	40	1260		Milk Purchase	177.8	32	5689.6
3	Mattha Sale	40.35	15	607.25		Mattha Purchase	10	6	60
4	Paneer Sale	0	300	0		Total			70665.1
						Salary Secretary	2496.8	1	2496.75
						Transportation charges	2496.8	2	4993.5
						Electricity	1	500	500
						Salary for seller	2674.6	1	2674.55
						Shop Rent	1	2000	2000
						Commission for SHG	1	544	544
						Extra	1		500
	Total			94431.4		Total			84373.9

Table 13: Net Profit of Dairy

Shree Jaagnath Dairy Kathpuriya Cheena Net Profit 2013(Three Month)				
S.No.	Month	Income	Expenditure	Net Profit
1	February	52753	47126	5627
2	March	91982	83670.5	8311.5
3	April	94431.4	84373.9	10057.5
4	Total Profit			23996

(Source: Chirag SHG Dairy)

3.7.9 Visit of Milk Collection Centre to Check Fat

Table 14: List of milk suppliers during the visit of Milk collection centre

GENERAL INFORMATION					
Village Name			Kholseer		
Block			Bageshwar		
District			Bageshwar		
State			Uttarakhand		
Shop Name			Bhatt General Store		
Shopkeeper Name			Gopalgi Bhatt		
Time of observation			6:30am-7:15am		
Date of observation			17-05-13		
Observer			Mr.Somesh Gupta and Mr. Manish Singh		
Instruments			Milk Analyzer M/C and Lactometer		
CUSTOMERS DETAILS					
S.NO.	Name of Customers	Qty. of milk (liter.)	Lactose	Fat	Price(Rs.)
1	Rajenti Devi	2.00	24	-	52.00
2	Govindi Devi	-	-	-	-
3	Kamla Devi	-	-	-	-
4	Hema Devi	2.400	27	-	62.40
5	Tulsi Devi	2.00	30	-	52.00
6	Raveti Devi	-	-	-	-

7	Shanti Devi	1.500	27	-	39.00
8	Basanti Devi	1.900	26	-	49.40
9	Bhawani Devi	2.400	25	-	62.40
10	Vimla Devi	-	-	-	-
11	Radha Devi	2.00	25	-	52.00
12	Gopuli Devi	1.800	27	-	46.80
13	Neema Devi	2.00	24	-	52.00
14	Parwati Devi	2.00	26	-	52.00

(Source: Observation during survey)

Figure: 20 Quality Analysis of Milk by Lactometer at Kholseer Village



(Source: Observation during survey)

Observation:-After the survey in eight villages we have found out different perception and information from the farmers, to correlate all of things with rural reality we have decided to go at milk collection centre early morning in the village and found out that farmers were actually right they were cheated by the middle man. Lactometer was used to check fat and lactose instead of milk analyzer machine in kholseer village by the middle man. Lactometer is old method to check lactose not to fat while milk analyzer machine is new technology used to check actual fat and lactose both. Prizes were given on the basic of lactose instead of fat both for cow and buffalo milk while everyone know that buffalo milk contains high fat content so prizes should be given more to buffalo milk but it was just opposite to expectation. When middle man was asked about

this then they were reply that we don't have sufficient time for a long process of checking for this chirag should be appointed a person.

3.8: PROBLEM FACED DURING THE SURVEY

In animal husbandry people generally keeps local breed of buffalo, cow, and goat.

The problem associated with animal husbandry is following:

- People are not aware about the cross breed of animal in the village.
- They don't have sufficient land to grow enough fodder for the animal.
- People of rakholi purchase grasses from the market @800-1200 per loota(One loota have 12-15gattha and one gattha equal to 35kg).
- People are liable to sold milk to local shops of villages instead of market at low prices.
- Most of people are found to have a cow which gives only 1-2 litres per day while some with buffaloes which gives 2-3 litre per day avg milk.
- Lack of veterinary facilities also a prominent problem in the area and for the treatment they have to carry their animal to bageshwar.
- Lack of quality fodder and cultivation techniques.
- Lack of technical expertise for disease and pest management.
- Animals also lack of vaccination facilities.

3.9: RECOMMENDATION

The recommendation model suggests the following essential points:

- Having own transport for marketing of milk and their products.
- Providing extension services to household like cattle feed, veterinary medical facilities, A.I services and training to farmers etc.
- To develop dairy farming payment should be on time because it will motivate farmers for increasing the milk production.
- Communication should be carried out per day to the farmers for sale of milk even after they are not providing milk to the dairy.
- Farmers were not satisfy with the given prizes of milk because they were cheated by the middle man at milk collection centre, to shot-out this problem a person should be appointed by chirag.
- A Receipt should be given to the farmers per day containing name of candidate, Qty.of milk, fat content, and price etc information to make liability (faith).
- Loan facilities should be provided to the SHG's members so that farmers will enables to purchase better breed of cattle's.

- The main focus should be given on sale of milk instead of to make paneer.
- A chilling plant and small packaging should be provided so that curd can be marketed easily with better quality.
- Better quality seeds should be provided to develop green fodder like that is in plain area.
- Long life span grass (**Auns**) should be planted so that they will be enables to get it at any weather.
- Fodder harvesting machine should be provided to increase the milk production.

CHAPTER 4: KEY LEARNING'S AND OBSERVATION

4.1: From Organization

1. During two months tenure of summer internship in central Himalayan rural action group (CHIRAG) have learnt many things by the given task in different village with culture.
2. From CHIRAG team we learn about the decentralized planning and team, how they work in a team manner, how they resolve the problems in meetings, how they work, how they make a relation with a farmer.
3. They are offering opportunities to foreign and Indian student to work in different field of rural development as interns. We have improved our communication skills with team members and foreign interns especially with Canada intern Sofia.
4. During one day field visit of Reetha village with U.S.A intern and chirag team member we learn about use of different medicinal plants.
5. Farmers were unable to sell their produce in the market at maximum rates due to transportation problems in this situation how chirag was helping them by cooperatives society.
6. Different SHG were made by the chirag team in different villages learnt that how we can interact with the women's for giving information about different topics i.e. Hurbs, loan for their animals, cattle feed, poultry, membership, income, expenditure etc. and how we can get their contribution in rural development.
7. We have learnt different grading of Pea at different prices by cooperative society.
8. We were unable to cover overall thing in short duration of time so we have learnt on five "J's"- Jal(water), Jangal(Forests), Jan(people), Janwar(Animals) and Jameen(soil) from chirag. Because these five "J's" are important for any rural development.

4.2: From animal husbandry

9. From the dairy visit we learn that how women were contributing their efforts for better management even after household work.
10. We learn the marketing agenda for milk supply with better quality.
11. We learn that how we can get more profit by various costs of product involved in a small Scale Dairy unit.

12. Chirag had established many milk collection centres in the villages and from these we learn that how villagers were cheated by giving less prizes of milk.

13. Women's were liable to bring fodder from long distance in the hilly area from the forest. While most of men were lost their earning money in drinking without future thinking.

14. We learn that how we can increase milk production in the village by providing better composition of cattle feed and long life span grass with chirag support.

4.3: General learning

15. During the home stay we learn that how they were survive in the hilly area in different condition and were faced many problems like i.e. natural calamities, transportation problem, marketing problems, health and education problem.

16. We were bit apprehensive before visiting the village about the availability of basic necessities like food, house, toilets etc but after visiting the villages were found much better than our expectations.

17. Before starting the survey we learn to build a reputation among the farmers, what will be the methods and procedures to build a good reputation with them, why they believes in you? Because in the area of rural development the first and initial thing is the Reputation building with the households, after that anyone share the problems, needs, and possible solution to each other and it's a initial stage to reach in the Heart of a villager.

18. The people in the villages were very cordial, helping, and co-operative. Fact of this had seen during the marriage party in sunkiya village that how women's of village were helping for cooking for the wedding members without any cook.

19. Second fact had seen in Raikholi village that how men of village were helping for construction of house. These families treated us like guest till the last days of our stay. They were seems like our family throughout the whole stay.

20. Earlier we took some time to explore the serenity of the village and get adjusted with a different lifestyle. Initially villagers were considering us a part of officials who would stay for a day and then move on. Few villagers consider us personnel from chirag to understand the village and access the village situation. But we proved them all wrong and they were surprised to know that we would be going to stay in village for a week just to understand the village and people's lifestyle.

21. Bright colors of the villages can be seen not by physically but by equality among peoples, female position in the house harmony among the villagers and these overall things have been seen by us during the survey which is absent in urban areas now-a-days.

22. Still there is sufficient scope of livelihood opportunity due to hilly areas. We would like to say that provide fund will not help but what the villagers actually need is information and knowledge about the produce and their standards and require in other bazaar for future progress of the community.

23. We were not treated merely as trainees rather given a chance by the team to make our contributions by participating in events, meetings, field visits which opened up different dimension in training to explore more ground.

24. Two months of training has provided a real view of rural India and let me understand the situation at grass root level.

25. I also realized how the policy makers sitting in the various posts in different areas of nation formulate policies that affect the lives of millions around the world without even having the knowledge of the grass root problems.

26. The summer internship helped us to have an unforgettable experience of exploring various aspects of village life it gives an opportunity to understand various phases of livelihood.

27. It helped me in understanding that things are very different on the other side so we should consider and then take action against and make the policies which really benefit for the beneficiaries.

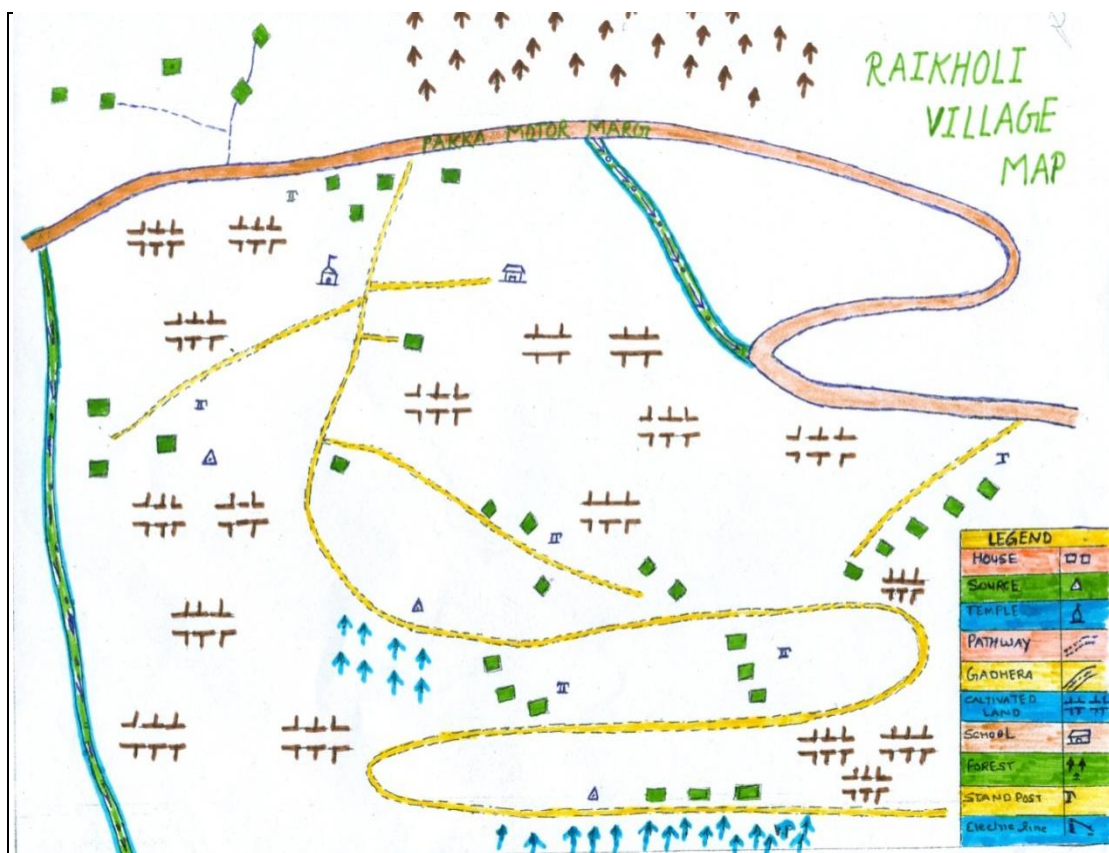
28. To conclude in the end, it gave me immense satisfaction for my efforts during the field segment as it provided us enough understanding of the rural India.

CHAPTER 5: REFERENCE

1. From website <http://www.census2011.co.in>.
2. From chirag (Central Himalayan Rural Action Group) library.
3. From website www.onefivenine.com.
4. Data from SHG Dairy supported by Chirag.

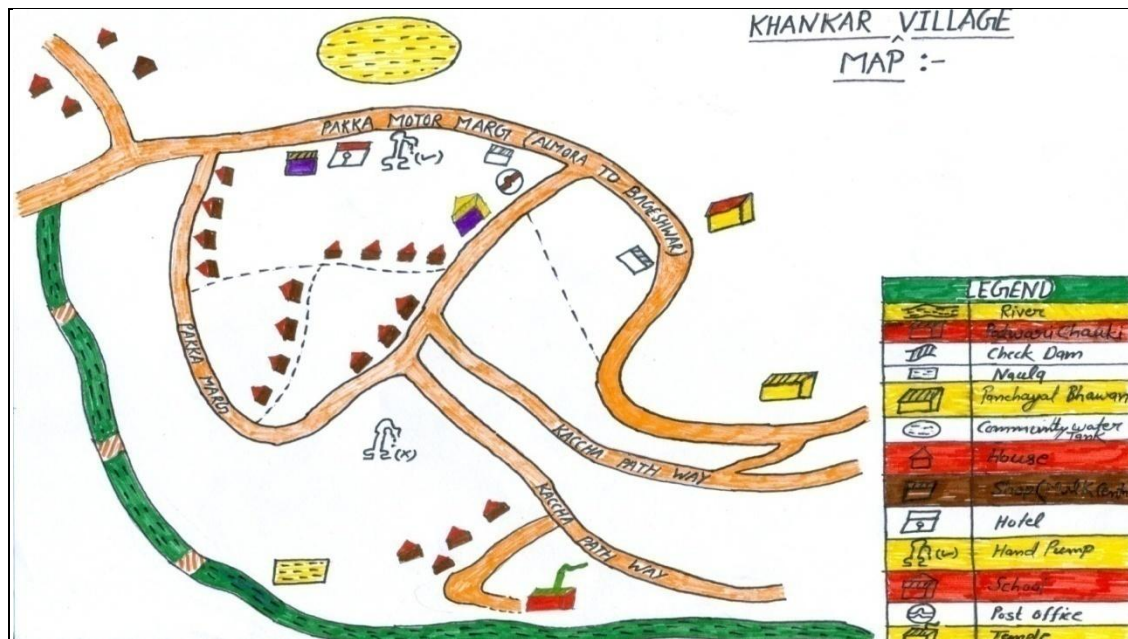
ANNEXURE

Annexure 1: Social Map of Raikholi Village



(Source: Discussion with villagers)

Annexure 2: Social Map of Khankar Village



(Source: Discussion with villagers)

Annexure 3: Natural Resources of Water for Human Beings



(Source: Observation during field visit)

Annexure 4: Natural Resources of Water for Animals



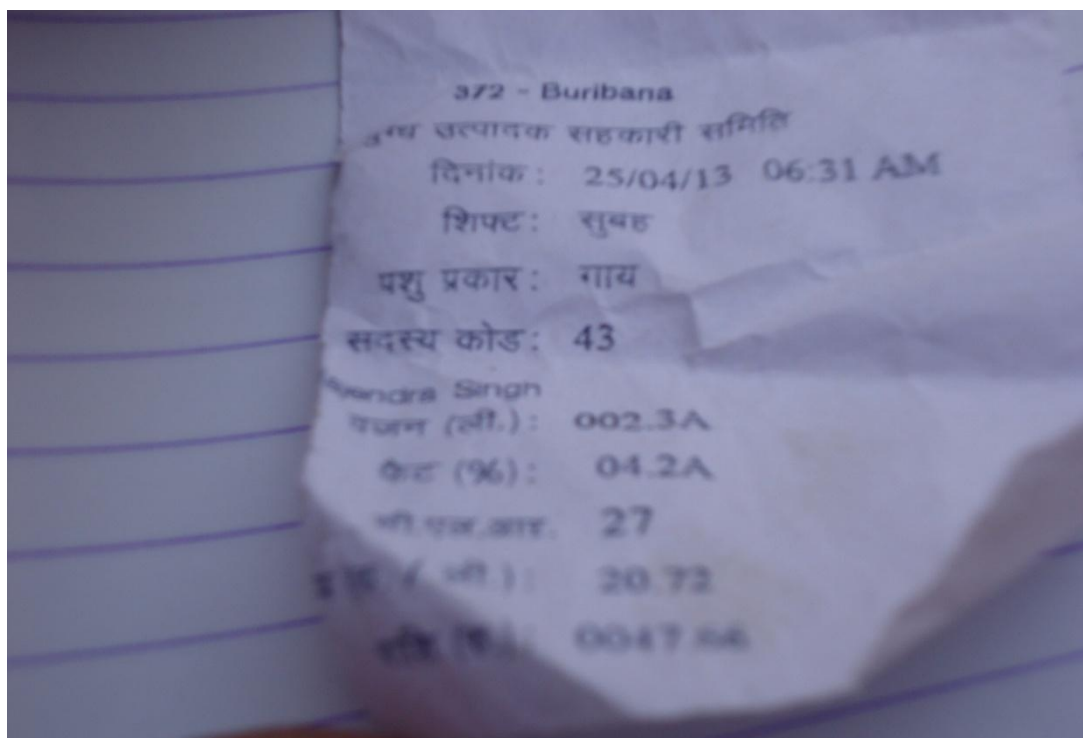
(Source: Observation during field visit)

Annexure 5: Collection and Marketing of Apricot oil by hand filling



(Source: Observation during field visit)

Annexure 6: Receipt Pattern of Anchal Dairy (Competitor)



(Source: From the farmers during survey)

Annexure 7: Questionnaire used for survey interviews

1.General information			
Name of interviewer			
Respondent name			
Name of village			
District		Block	
Age of respondent		Date of interview	

2.Question Related to Cattle Milk Production(CMP) and Income Generation		
Questions	Options	Numerical Codes
2.1 Do you have any cattle?	Yes	1
	No	0
2.2 Which types of cattle do you have?	Cow	1
	Buffalo	2
	Goat	3
	Bull	4
	Horse	5

	Sheep	6
	Other	7
2.3 How many cattle do you have?	Cows	-----
	Buffaloes	-----
	Goats	-----
	Bulls	-----
	Horses	-----
	Sheep	-----
	Other	-----
2.4 How many are milch animals from above respectively?	Cows	-----
	Buffaloes	-----
2.5 Which breed of animal do you have?	Hilly breed	1
	Holysten	2
	Jersey	3
	Other	4
2.6 Do you sell milk in the dairy?	Yes	1
	No	0
2.7 If yes, How much milk are you selling daily approximately?	1-5 Lt	1
	6-10 Lt	2
	11-15 Lt	3
	>16 Lt	4
2.8 In which dairy are you selling?	Anchal	1
	Chirag(SHG)	2
	Others	3
2.9 Why do you prefer to sell milk in this dairy?	Giving more prize	1
	Nearby home	2
	Personal contact	3
	Others	4
2.10 How much are you earning from the sale of milk per month?	500-1000 Rs	1
	1000-1500 Rs	2
	1500-2000 Rs	3
	>2000 Rs	4
2.11 Where are you investing money that has been earned?	Agriculture	1
	Education for children	2
	Animal Husbandry Purchase	3
	Animal Husbandry Feed	4
	Medicine	5
	Household consumption	6
2.12 Are you satisfied with this dairy?	Yes	1
	No	0
2.13 If No, why do you not like to sell milk in the dairy?	-----	
2.14 What fodder do you use for increasing the milk	Cattle feed	1

production?	Dry grass	2
	Choker	3
	Others	4
2.15 Do you purchase any cattle feed?	Yes	1
	No	0
2.16 If Yes, where do you buy it?	Chirag (SHG) dairy	1
	Anchal dairy	2
	Market	3
2.17 If No, why do you not like to purchase?	-----	
2.18 Do you prefer A.I services for the animal?	Yes	1
	No	0
2.19 If Yes, Where are you like to take these services?	BAIF	1
	Market	2
	Other	3
2.20 If no, Why do you not prefer A.I services?	Artificial	1
	Not Reliable	2
	others	3
2.21 What do you yourself think are the main benefits of selling milk?	Getting Employment	1
	Income generation	2
	Women Empowerment	3
2.22 Do you have any suggestion to make better dairy facilities?	-----	