

## 4. KAILALI DISTRICT

### 4.1 District background

#### 4.1.1 Location

Located in the Seti Zone of the FWDR, Kailali District is bordered by Karnail River and Bardia and Surkhet districts in the east, Kanchanpur and Dadeldhura districts in the west, Doti in the north and Mohana River and India's Utter Pradesh in the south. The district comprises two municipalities (Tikapur and Dhangarhi) and 42 VDCs. The altitude of the district varies from 109 m asl to 1 957 m and the climate is tropical to subtropical.

Two agro-ecological zones are differentiated on the basis of altitude: (a) *Chure* and (b) the *Terai* region. To the north of the Kailali lie the hills of *Chure*, which stretch east to west parallel to the Mahabharat. The *Terai* region can be divided further into two parts. One is the Bhawar region, with its a narrow strip of fertile land and popular forests. The other is the main *Terai* region, which has an elevation level that is lower than that of Bhawar.

#### 4.1.2 Land resources

According to the National Sample Census of Agriculture of 1991, 24.9 percent of the total 3 324 791 ha of land in the district consists of agricultural land. About 71 percent (231 090 ha) comprises forest land. The land use pattern of the district is shown in Table 4.1.

**Table 4.1: Land use pattern in Kailali District**

Land use type	Area (ha)	Percentage
Agriculture land	80 783	24.9
Forest	231 090	71.2
Pasture	4 837	1.5
Others	8 081	2.5
<b>Total Area</b>	<b>324 791</b>	<b>100.0</b>

Source: Nepal District Profile, National Research Associate 1999.

Land capability surveys indicate that 59 percent of the area in the district is suitable for agricultural use. Of the total 80 783 ha agricultural land, 86.2 percent (69 667 ha) is cultivated. About 64 percent of total cultivated land in the district is irrigated. Table 4.2 presents the agriculture land use pattern of Kailali.

**Table 4.2: Agricultural land use pattern in Kailali District**

<b>Agricultural land use pattern</b>	<b>Area Hectare (ha)</b>	<b>Percentage</b>
Cultivated land	69 667	86.2
Irrigated	44 489	63.9
Rainfed	25 178	36.1
Uncultivated land	11 116	13.8
<b>Total agriculture land</b>	<b>80 783</b>	<b>100.0</b>

Source: Nepal District Profile, National Research Associate 1999.

#### 4.1.3 Demography

The population of Kailali District was estimated at 417 891 in 1991 with a gross population density of 129 persons per sq km. Population growth in the district is considered high at 4.9 percent per annum, or more than double the national average. From 1971 to 1981, the population of Kailali increased from 128 877 to 257 905, a phenomenal growth rate of about 7.18 percent per year. This can be attributed to the movement of people from adjoining hill districts, migrants who look to *Terai* for survival, an easy life and more abundant food. Key features of Kailali District are given in Table 4.3.

**Table 4.3: Population and related key features of Kailali district**

<b>Particulars</b>	<b>Quantities</b>
Population (no), 1991	417 891
Male	210 127
Female	207 764
Total no of household	60 928
Average household size	6.9
Child mortality rate (per 1 000 live births)	115
Economically active Population (no)	135 490
Economically Active Population in Agriculture (no)	108 119 (79.8%)
<b>Educational variables</b>	
Adult literacy ratio (%), 1996	34.88
Male	55.75
Female	15.27
<b>Educational attainment index</b>	<b>0.272</b>
Means years of schooling	1.767
Male	2.686
Female	0.879
Population Growth Rate in Percentage	4.94
Population Density Per Sq. Km	129.2
<b>Life expectancy (yrs), 1996</b>	<b>53</b>
Male	53
Female	51

Source: NRA, 1999.

The population density per hectare of the total district area, agriculture land and cultivated land are 1.29, 5.17 and 5.99, respectively, with corresponding gross population density of 129, 332 and 503 per sq km. Cultivated land per household is 1.01 ha while the average farm size is 1.35 ha.

Ethnically, *Tharu* comprises about half of the total district population. *Brahmin*, *Chhetry* and *Thakuri* make up about 24 percent. The rest consist of other ethnic groups, mainly, occupational castes (15 percent), *Magar* (4 percent) and *Tamang* (0.4 percent) .

Table 4.4 and 4.5 present the population of Kailali district by literacy status and by major occupation. In 1996, overall adult literacy rate in the district was estimated at 34.9 percent corresponding to a 55.8 percent male literacy rate and a 15 percent female literacy rate. About a third of the total population is economically active. In Kailali District, nearly 80 percent of the population 10 years and above are engaged in farming (Table 4.3).

**Table 4.4: Population (6 years and above) by literacy status and sex in Kailali District**

Literacy status	Male	Female	Total
Literate	74 846	24 653	99 499
Illiterate	90 213	138 547	228 760
Not stated	1 286	1 831	3 117
<b>Total</b>	<b>166 345</b>	<b>165 031</b>	<b>331 376</b>

Source: CBS, 1999.

**Table 4.5: Population distribution (10 years of age and above), by major occupation in Kailali District**

Major Occupation	Number	Percent
Farming	108 119	79.80
Service	10 296	7.63
Professionals/technical workers	1 642	1.22
Productive labour work	5 164	3.81
Sales worker	4 377	3.20
Clerical worker	1 180	0.87
Administrative worker	221	0.16
Others	3 390	2.50
Occupation not stated	1 101	0.81
<b>Total</b>	<b>135 490</b>	<b>100</b>

Source: CBS, 1999.

#### 4.1.4 Socio-economic indicators

Table 4.6 presents the main socio-economic indicators of the district including its position among the 75 district of Nepal.

**Table 4.6: Major socio-economic indicators of Kailali District**

Indicators	District Position	Remark
Poverty and Deprivation Situation Rank	20	Worst
Human Development Index (rank)	52	Lowest
Gender-adjusted HDI (rank)	47	Lowest
Women Empowerment Index	30	Medium
Natural Resources Endowment Index (rank)	54	Best
Socio-economic Infrastructure Development Index	9	Worst
Households with less than 0.5 ha farm size (%)	29.62	Best

Kailali is said to be the worst among all *Terai* districts of Nepal despite its being ranked best from the perspective of natural resource endowment. It is ranked the lowest in terms of poverty and gender-adjusted indexes.

#### 4.1.5 Agriculture and food situation

##### **Food self-sufficiency and agricultural production**

Most agricultural production takes place in the southern *Terai* region. The district produces food enough to meet a daily per capita calorie count of 3 157, which is above the recommended requirement of 2 410 calories. According to a report by ICIMOD (1997), landless and marginal farm households (farm size <0.5) comprise about 30 percent of the total number of households in the Kailali. The district produces a surplus in foodgrain production (Table 4.7). Each farm household has an average of about 5 animals. Livestock typically comprises mainly cattle (56 percent), buffaloes (20 percent), goats (18 percent) and sheep (6 percent).

**Table 4.7: State of food sufficiency in Kailali district**

Variables	1994/95	1995/96	1996/97	1997/98
Population (no)	506 569	526 859	514 227	531 578
Total edible production (mt)	99 770	111 981	119 002	119 932
Requirements (mt)	91 694	95 361	93 075	96 216
Surplus (mt)	8 076	16 620	25 927	23 716
Surplus percentage (%)	8.8	17.42	27.8	24.6

The figures above show Kailali District to be self-sufficient in terms of food production. The district is said to support neighbouring food deficit hilly districts, namely, Dadeldhura, Doti, Achham, and Baitadi. The accessibility of the district improved after the construction of a bridge at Karnali River at Chisapani and the district is now linked with the rest of Nepal.

#### 4.1.6 Agricultural input use

Table 4.8 below shows the distribution of different types of fertilizers and improved seeds of major crops last three years.

**Table 4.8: Annual sales of chemical fertilizer and seeds in Kailali District**

Year	Fertilizer (mt)				Seeds (mt)			
	Urea	DAP	MOP	Total	Rice	Wheat	Maize	Total
1996/97	2852.5	2149.9	90.80	5093.2	4.1	76.5	2.0	<b>82.6</b>
1998/99	3035.9	1532.6	114.5	4683.0	2.7	52.2	1.1	56.0
1999/00	1726.8	1767.25	0.750	3494.8	6.2	71.6	0.9	78.7

The statistics indicate a bleak situation in the district with regard to the sale of improved seeds and fertilizers over the last four years. Farmers have apparently not been able to benefit from increased irrigation facilities and improvements in the agricultural extension system and agricultural research.

A comparison of input use status in the district before and after the liberalization of the fertilizer trade in 1997 is presented in Table 4.9. Figures in the table show negative growth rate in fertilizer use in Kailali after deregulation despite the Ministry of Agriculture and Cooperative's (MOAC's) claim that there has been overall improvement in the supply of fertilizer after deregulation.

**Table 4.9: Comparative input use in Kailali District before and after fertilizer trade deregulation**

Variables	1996/97	1998/99	Growth rate
Irrigation (ha)	57494.2	57894.5	0.35
Fertilizer use (mt)	5093	4683.0	-4.05
Agriculture credits (NRs '000)	16742	17323	1.74
Improved Seeds (mt)	88.475	57.6475	-17.42

Source: Statistical Information on Nepalese Agriculture, Agricultural Statistical.

The district reportedly experienced shortages in fertilizer in 1998/99. There are two reasons for this. First, AIC reduced district fertilizer quota since it had to proportionately distribute its reduced import amount over 75 districts, giving priority to hilly and mountainous districts. Secondly, private importers of urea receiving government subsidies focused their trade around Biratnagar and Birgunj areas due to AIC's pricing system for fertilizers which was set uniformly throughout the country. This provided an

opportunity they could not miss to earn hefty profits . In contrast, selling fertilizer to the western and far western regions may likely turn out to be a losing venture.

However, even after AIC introduced a differential pricing system in September 1999, the private sector hardly transported fertilizers to Kailali District as the company had set prices with reference to five fertilizer entry points – Biratnagar, Birgunj, Bhairahawa, Nepalgunj and Dhangarhi (Kailali District) – regardless of the actual entry point in Nepal<sup>6</sup>. Apart from this, it was reported that unlike other *Terai* districts of Nepal, there occurred insignificant cross-border flow of fertilizers from neighbouring districts of India to Kailali District due to tight security on the side of India. The amount flowing to Nepal through cross-border trade is said to be highest in central Nepal, moderate in eastern Nepal and minimal in far western Nepal.

#### 4.1.7 Organizations responsible for the development of agriculture in the district

The types and number of organizations directly responsible for agricultural development, particularly relating to food security matters, are given in Table 4.10.

**Table 4.10: Agriculture-related line agencies in Kailali district**

Name	Offices present	
	District HQ	Field/VDC
District Agriculture Development Office (DADO)	1	13
District Livestock Services Office (DLSO)	1	14
District Irrigation Office (DIO)	1	-
Agriculture Inputs Corporation (AIC)	1	-
Agriculture Development Bank (ADBN)	1	-
District Forest Office (DFO)	1	4
District Development Committee (DDC)	1	-
District Cooperative Office (DCO)	1	-
Nepal Food Corporation, Zonal Office (NFC)	1	-

Of the nine organizations present in the district, the first two mentioned – DADO and DLSO – are responsible for supporting agricultural production through improved agricultural extension, training and services (transfer of technology). The next two, namely, DIO, AIC and ADBN contribute to agricultural production through improved irrigation facilities, wider supply of seeds and fertilizers and better access to agricultural credit, respectively. The NFC is responsible for local procurement of rice and wheat from the district and neighbouring districts and for dispatching these to food deficit districts. The DFO contributes to food security through the protection and management of forest resources while the DDC, a local

<sup>6</sup> As a rule, AIC tenders fertilizer imports for deliveries given at these five places while fertilizer supplies enter Nepal from Birgunj and Bratnagar. Thus, procurement prices of AIC would be a little higher compared to that of private traders.

government body, coordinates district-based government line agencies. The DCO's job is to register cooperative societies.

Pratappur VDC in Kailali District was selected for this study. The following section briefly introduces this area..

## **4.2 Background of Pratappur VDC**

### 4.2.1 Location

Pratappur VDC is situated 45 km southeast of the district headquarters Dhangadi. All the nine wards contained in the area have access to motorable roads. This VDC is surrounded by other village communities, namely, Baliya and Chuha in the east, Pathariya in the west, Baliya in the north and Jari River and Chuha in the south. Main hamlets are Pratappur, Durgauli, Kharaula, Banbarsa, Sonapur, Dhanchiya, Hariyapur and Nayabasti.

### 4.2.2 Social features

In 1999, the population of Pratappur was estimated at 9 217 with 1 278 households. Average household size is 7.21. The original inhabitants of this area are *Tharus* whose main occupation is fishing and farming. They are said to be primarily fishermen but are also farmers. *Tharus* used to be big landowners in the area, but most of them have become landless and now work as bonded labourers.

Rural communities in Pratappur are heterogeneous in nature. Like other *Terai* regions, migrants from other villages have settled in the area especially after the eradication of malaria in the 1960s. Aside from *Tharus*, dominant households in the VDC are *Thakuri*, followed by *Brahmin* and *Chhetris*.

### 4.2.3 Economic features

Agriculture is the main occupation of the people of Pratappur. Main crops include rice, mustard, wheat and maize. Sugar cane cultivation has been increasing in Pratappur following the establishment of the Basulinge Sugar Factory at neighbouring Chuha VDC, which is located at the southeastern border.

The lack of fodder and fuelwood has prompted farmers to plant trees near the border of agricultural fields. According to key informants, about 30 percent of households are self-sufficient in terms of food production. Raising livestock is quite common and animals are kept mainly for ploughing purposes. Chemical fertilizers are used to maintain soil fertility. Agriculture is also heavily influenced by the availability of irrigation facilities.

### 4.2.4 Natural resources

The area was a sparsely inhabited jungle before the 1970s. After it was opened for resettlement and malaria was eradicated, the VDC began to see an inflow of people from neighbouring Dadeldhura,

Doti and Achham districts. The local forest area has been converted into agricultural land and, save for a few scattered trees, forests no longer exist in most places. The people have therefore initiated community plantations along the riverbanks to control floods. However, there are still several patches of private forest land present. Cattle and buffalo are used mainly as draft animals for transport and soil preparation as well as milk production.

#### 4.2.5 VDC resources

As in the other study VDCs, a social and natural resources map was prepared by local communities using locally available materials to identify the comparative location and importance of different resources within Pratappur. This map summarized the resources of the area as follows:

##### ➤ Infrastructure

- Schools. The VDC has seven schools in total – six primary and one secondary.
- Irrigation and water supply. The village has an irrigation channel, a few shallow tubewells (STWs) and drinking water schemes supported by the Nepal Water for Health (NEWAH).
- Other structures. The VDC also has a few temples, mills and several bridges and culverts.

##### ➤ Local Institutions

- One Small Farmers Cooperative Association;
- One private health clinic and several clubs; and
- NGOs working for liberation of bonded labourers.

#### 4.2.6 Development interventions

Presence of different types of organization/ programs in the VDC are listed in Table 4.11.

**Table 4.11: Different Organizations present in Pratappur**

VDC office	UNDP's Sustainable Community Development Programme (SCDP)	PCO (Rural Telephone Service)
Red Cross	GTZ's Rural Infrastructure Community Programme (RICP)	Subhealth post
Chotti Post Office	Group for International Solidarity/ Nepal (GRINSO)	

Apart from the above, other organizations located outside the VDC but also contributing to the development of the village are presented in Table 4.12.



**Table 4.12: Organizations outside Pratappur contributing to VDC Development**

Rural Development Bank	Department of Road	Agriculture Service Centre
Basulinga Sugar Factory	Institute of Community Health (Vitamin A Project)	Livestock Service Centre
District Forest Office	Nepal National Dalit Association	Agricultural Development Bank
Biogas Support NGO		

Kharaula Village, which comprises Wards 3 and 7, was selected for the in-depth study. The next section is about this area.

### 4.3 Kharaula

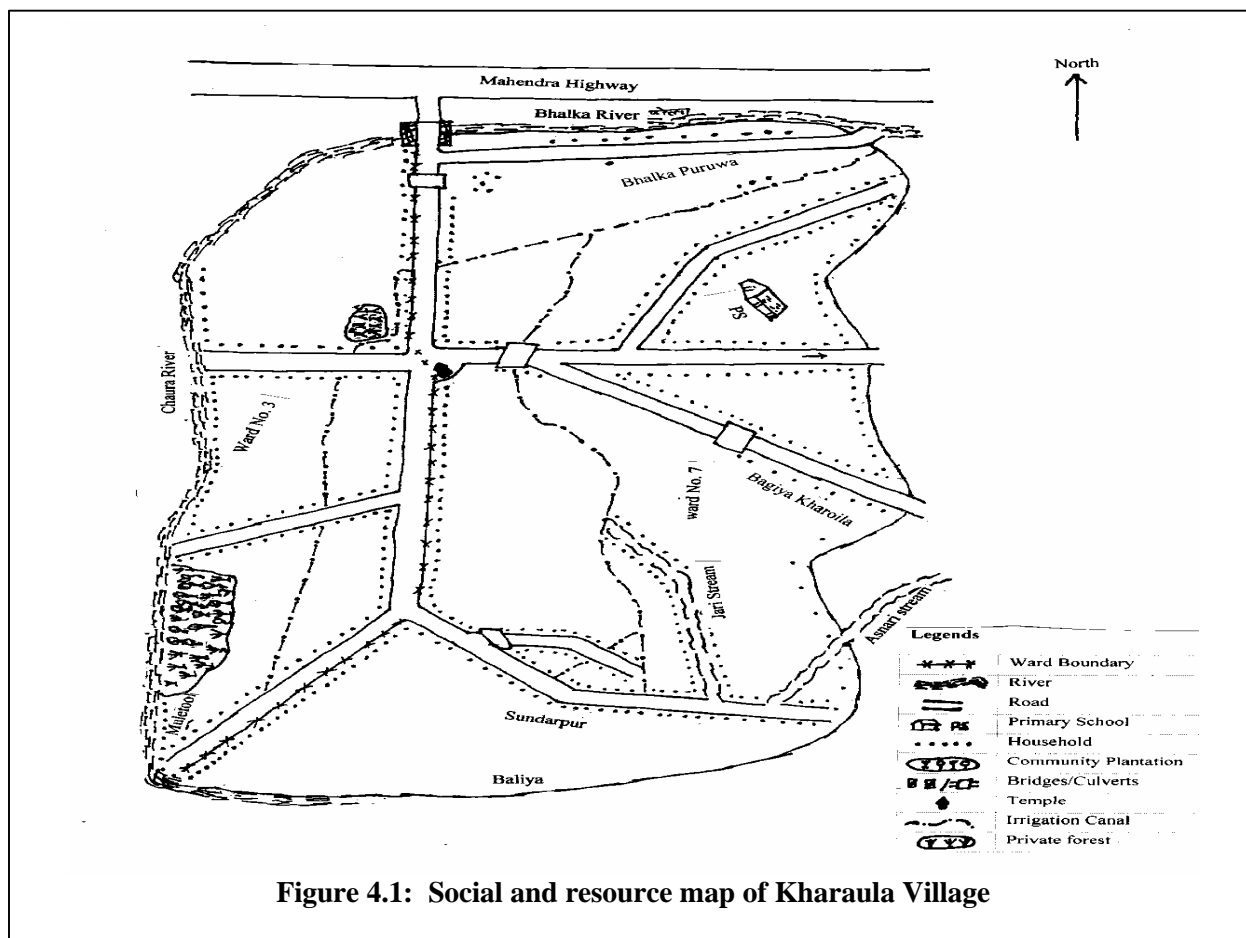
#### 4.3.1 Location and ethnic composition

Located at the northern border near Mahendra Highway, Kharaula Village comprises Wards 3 and 7 of Pratappur. Ward 7 is formed by five major settlements – Kharaula, Santinagar, Dundarpur, Choka Badi and Naya Basti. Similarly, Ward 3 consists of Multol, Chorahi Dhik and Kharaula. Kharaula is bordered by Bhalka river in the north, Pathariya River in the south, Baliya in the east and Chaura River in the west. Although Kharaula covers Wards 3 and 7, this study was carried out in mainly in Ward 7. Therefore, the following descriptions refer specifically to Ward 7 unless stated otherwise. Figure 4.13 depicts the social map of Kharaula Village.

Total households by ethnic composition in the village are presented in Table 4.13. Almost 77 percent of the population of this village are *Tharu*, followed by *Brahmins* and *Chhetris* as the dominant caste groups. Only two households from the *Magar* ethnic group and one *Dalit* household live in Kharaula. Ethnic distribution of the Kharaula is presented below.

**Table 4.13: Distribution of households by ethnic composition**

Caste	Household	Percentage
<i>Tharu</i>	96	76.8
<i>Brahmins/Chhetris</i>	26	22.8
<i>Magar</i>	2	1.6
<i>Dalits</i>	1	0.8
<b>Total</b>	<b>125</b>	<b>100</b>



**Figure 4.1: Social and resource map of Kharaula Village**

#### 4.3.2 Local resources

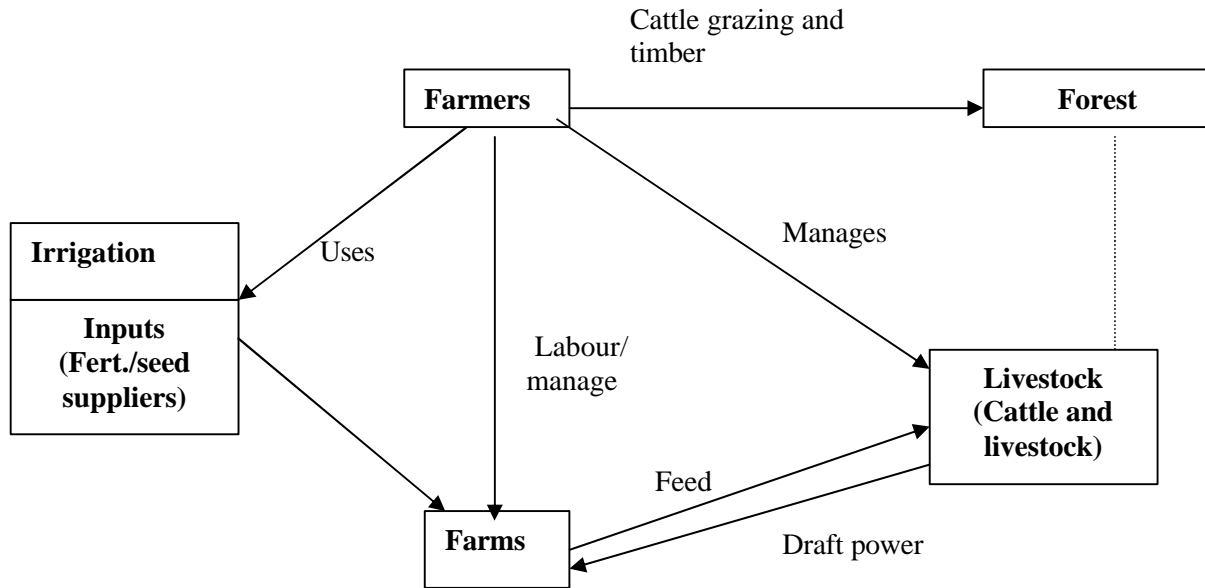
The Village map of Kharaula VDC (Wards 3 and 7) prepared by local communities during the PRA exercise is given in Figure 4.1. As seen in the figure, the village has other major resources apart from agricultural land as shown in Table 4.14. Social mapping was again used to enable villagers to identify and verify the households in the village.

**Table 4.14: Major resources of Kharaula Village**

Community plantation	Along the bank of Chaura River
Primary school	1
Shiva Temple	1
Bridges and culverts	3
Drinking water taps/hand pumps	Almost every household
Irrigation system (Farmer-managed)	Command areas, Wards 3 and 7
River/water springs/stream	Bhalka River, Chorahi River
Settlement roads	

### 4.3.3 Agriculture system

Figure 4.2 illustrates typical farming systems in Kharaula prepared based on the observations of and discussions with key informants. As shown below, the farming system is relatively independent of forest and public grazing lands. A much larger proportion of livestock fodder comes from crop residues.



**Figure 4.2: Farming system in Kharaula Village**

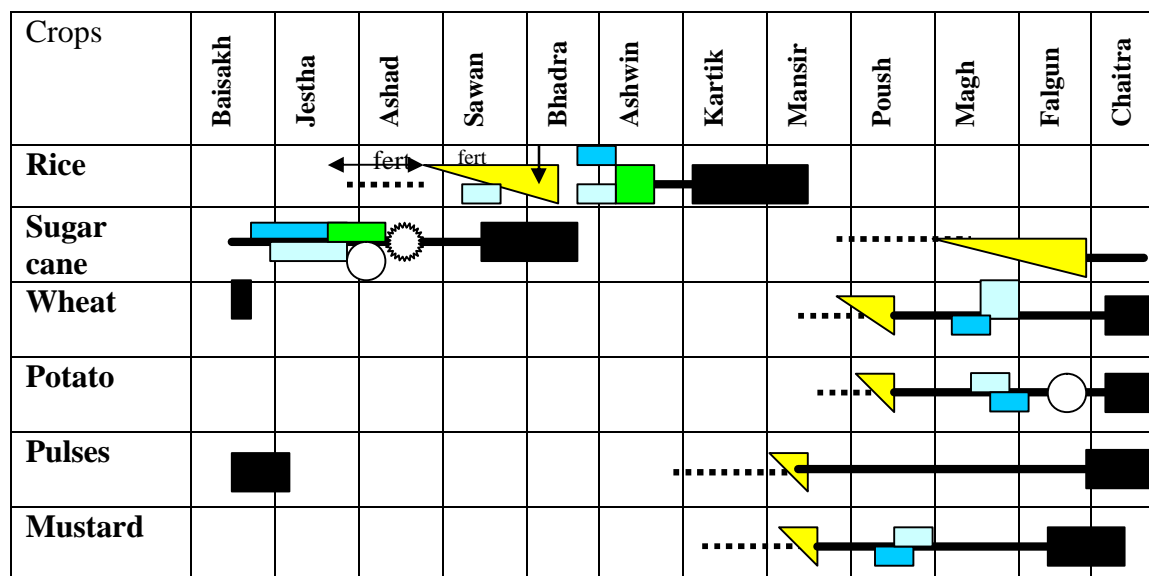
Both cattle and buffaloes are used as draft animals for transport, soil preparation and milk production. Chemical fertilizers are used to maintain soil fertility. Agriculture is heavily influenced by the availability of irrigation facilities.

### Cropping pattern

As stated earlier, agriculture is the main occupation of the people of Kharaula. Although agriculture is in a stage of transition (i.e. from the subsistence to commercial), cash crops such as sugar cane and sunflower occupy a small percentage of total cultivated area. Farmers have begun to grow sugar cane after the establishment of the Basulinge Sugar Factory in Chuha VDC. A few farmers have also tried to grow sunflowers because of the low price of and decreased demand for mustard aggravated by increased aphid infestation. Apart from guaranteeing purchase of the produce, the factory has provided sugar-cane seeds, inputs (fertilizers and plant protection chemicals) and technical support services.

A number of different crops are grown in Pratappur. In terms of area, rice is the predominant crop in Pratappur and hence the cropping system is essentially rice-based. The rice-wheat cropping pattern is most common followed by the rice-fallow and rice-pulses combinations. Table 4.15 presents the area's monthly cropping calendar.

**Table 4.15: Cropping pattern in Pratappur VDC**



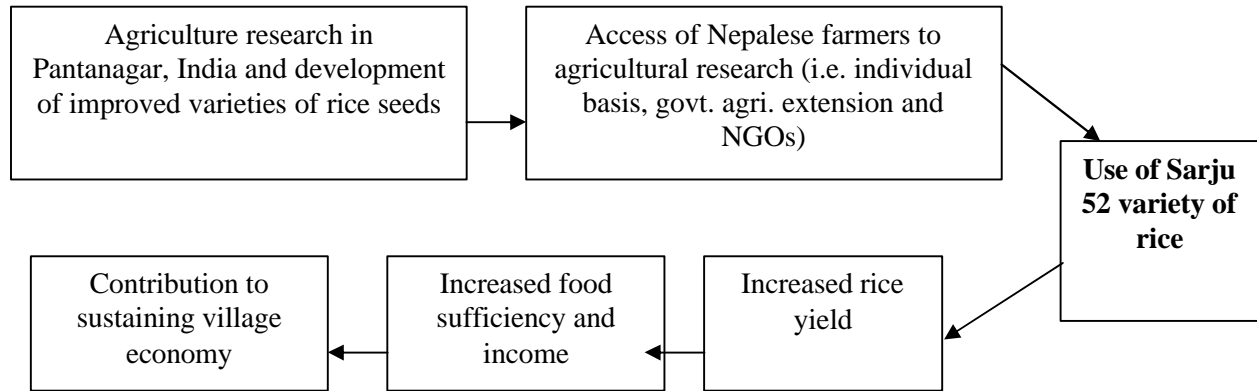
**Legends**

- Manuring (fertilizers)
- Harvesting
- Planting
- Tightening
- Land Preparation
- Irrigation
- Weeding
- Soil filling
- Bed preparation

Although a few improved Nepalese rice varieties such as Janaki, Savitri, Pant-4, Pant-8, Kanchi Masuli and Masuli are found, the Indian variety Sarju-52 predominates the rice area in Pratappur. Farmers say that Sarju-52 rice not only gives a better yield but also tastes good and has good consistency. Sarju rice matures at least 8 to 10 days earlier than local Janaki rice, which is susceptible to diseases and is difficult to thresh.

The flow diagram below shows how the Sarju-52 variety has played an important part in sustaining the village economy. Many NGOs, even the Sustainable Community Development Programme (SCDP) of UNDP, financed farmers to go to Pantnagar and bring back the Sarju-52 rice variety. Many farmers in Kharaula said that they are not aware if Nepalese agricultural research has been able to produce a rice variety that can replace the Surju variety or if it can do so in the near future.

The diagram illustrates how improved agricultural research outside of Nepal has contributed to sustaining the village economy. This is not specific to Kharaula only, but seems to be applicable to the two *Terai* districts of the FWDR, namely, Kanchanpur and Kailali.



### **Livestock**

Both cattle and buffaloes are used as draft animals for transport and soil preparation as well as milk production. A much larger proportion of livestock fodder comes from crop residues and the system is relatively independent of forest and public grazing lands. Despite good transport facilities and markets, the number of buffaloes in the village seems poor. There is said to be a lack of fodder and labour for livestock management.

### **Crop yields**

Table 4.16 compares average yields of major cereal crops as reported by key informants during the PRA in the village with figures reported in the government statistics report published by the MOAC in 1998/99. Figures in the table show that the average yield of cereal crops is higher in the village compared with national statistics because of the use of improved varieties, improved seeds and irrigation facilities such as STWs and farmer-managed surface irrigation systems. Farmers generally credited improvements in performance to the Sarju-52 rice variety and the Basulinge Sugar Factory.

Many farmers said they had no incentive to grow rice because their village was isolated from the rest of Nepal and there was no motorable bridge at Chisapani in Karnali River to link it to the rest of the country. But with the construction of Chisapani Bridge, villagers felt they were part of Nepal, thus decreasing their dependency on the Indian market. Many farmers reported a decrease in rice area due to a switch to sugar cane after the operation of the Basulinge Sugar Factory. An assured market for the product together with improved access to seeds, technical support services and fertilizers have encouraged this change.

However, modern agriculture was hardly encouraging in the VDC. Villagers said they did not make use of modern crop varieties or chemical fertilizers, except for normal season rice grown in lowland (i.e. *khet*). During the discussions many said the village is too far and out of track for district officials and technical workers to visit.

**Table 4.16: Average yield of the crops in Pratappur**

Crops	Village average (mt/ha )	District average (mt/ha), 1998/99
Rice (Sarju 52)	3-4	2.6
Wheat	1.5-2	1.14
Mustard	0.6.-0.7	
Sugar cane	20-30	
Potato	8-10	13.0

Source: VDC record, Kharaula, DADO, 1998.

#### 4.3.4 Economic well-being

This section describes how people of Kharaula identify and analyse the different wealth groups in the village and the socio-economic stratification of the people in Kharaula. It also outlines the definitions and indicators of wealth of the people of Kharaula as well as the livelihood strategies of households from different economic classes as identified by villagers themselves. Table 4.17 gives villagers' definitions and indicators of well-being.

**Table 4.17: Villagers' indicators of wealth and economical status in Kharaula Village**

Rank	Criteria	Remark
One	Landholding size	The larger the land size, the richer the household
Two	Ownership of rice mill, tractor, etc.	Number of family members working and types of employment (i.e. regular income ensured)
Three	Type of house	The smaller the house, the poorer the household
Fourth	Nature of job/type of business	Locally employed, outside the VDC, foreign employed
Fifth	Food sufficiency within the family	Number of food self-sufficient months
Sixth	Credit	Credit provider or borrower
Seventh	Tenancy	If a household is a tenant, it is poorest
Eighth	<i>Kamaiya</i> , bonded labour	The more frequent is outmigration to India, the poorer the family

Table 4.17 reveals that the people of Kharaula Village measure poverty in terms of the size of land owned by the household followed by ownership of equipment, type of house, nature of job or business and so forth. But *Kamaiya* were automatically placed in the poorest group without considering other criteria. It was reported that in Pratappur VDC, many *Tharus* (the original inhabitants of Pratappur )

work under a permanent labour contract (some can even be described as bonded labourers) to absentee landlords.

Since Kharaula enjoys a surplus, food sufficiency was ranked only sixth as an indicator of wealth but it was still an important criterion. Even if people considered all criteria in determining economic stratification of the households, it was the food sufficiency criteria that dominated discussions, particularly during the categorization of poor households. This indicates how *Terai* people attached importance to food sufficiency as well.

Since Kharaula Village is composed of two wards comprising too many households to carry out economic stratification in a single sitting, the economic well-being assessment was done only with regard to Ward 7. Since the purpose of the study was not to initiate a new project nor was it an action research leading to a new project, an assessment of just one ward was expected to provide sufficient information necessary for the purpose of the study. Table 4.18 presents economic classes of Kharaula households as categorized by participants following indicators listed above in Table 4.17.

**Table 4.18: Economic stratification of people in Kharaula Village**

<b>Classification</b>	<b>No</b>	<b>%</b>	<b>Types</b>
Richest	3	2.4	Food sufficient year round, land owned at the road head, selling producer, tractor owner
Rich	19	15.2	Food sufficient year round, mill owners
Medium	47	37.6	Food sufficient for 6 to 8 months, more working males in the family.
Poor	16	12.8	Food sufficient for 4 to 6 months, working in others' farms
Poorest	40	32.0	Food sufficient for less than four months, <i>Kamaiya</i> , bonded labour etc.
<b>Total</b>	<b>125</b>	<b>100</b>	

The above table shows that Kharaula is highly skewed with respect to economic well-being. Although the village was said to produce food in amounts large enough to be able to sell to other villages or feed other parts of the country, only less than one fifth of the total households in Kharaula was food self-sufficient and approximately 45 percent of households was poor. Of the total 56 poor households, 40 households (71 percent) were *Kamaiyas*. Also, about 77 percent of households in Kharaula Village was considered poor and food insecure, not having enough to eat for six or more months. The people of Kharaula define rich, medium and poor as follows:

- **Rich.** Households with large landholdings and which own rice mills and tractors. They provide credit to other households and manage farms through *Kamaiyas* or bonded labour. *Kamaiyas* are agricultural labourers bonded by an annual fixed wage and permanent labour contract. Rich households hire farm labour on wage.

- **Medium.** Households whose agricultural production provides the family enough to eat for 9 to 12 months depending on the season. A household is considered medium-sized when it owns the land between 1 to 2 *bigha* (0.68 ha is equivalent to a *bigha*). They typically have one or two STWs. Medium households usually work for the government or private sector to support the family and cultivate their own land.
- **Poor:** Included are *Kamaiyas*, tenants and small farmers. The average landholding size of poor households is less than one *bigha*. Not only is land size small, but farms are mostly rainfed as well.

The above definition shows that land size is seen as a very important indicator in determining the economic status of the people in the *Terai*. They also attach importance to ownership of fixed assets such as rice mills and tractors.

As mentioned earlier, Kharaula Village is highly skewed in terms of economic stratification or economic well-being of the people. Table 4.19 presents the economic stratification of households by ethnicity or caste as differentiated by villagers during the PRA. This reveals that in-migrants are usually rich and that original inhabitants are proportionately poor. Although there could be many reasons for this, most respondents attribute this to *Tharus* being “less innovative” and “late to adopt” new modern technologies. *Tharu* reportedly opt to grow low-yielding rice varieties due to a preference for rice in terms of taste. While this is changing, the rate is slow and not encouraging considering the level of development, opportunities and potentials of *Terai* areas such as that of Pratappur VDC.

**Table 4.19: Economic stratification of people in Kharaula Village by ethnic group**

	<i>Tharu</i>	<i>Brahmin/Chhetris</i>	<i>Magar</i>	<i>DAG group</i>	<b>Total</b>
Richest (HH)	2	1	0	0	3
Percent	2.1	3.8	0	0	2.4
Rich (HH)	9	10	0	0	19
Percent	9.4	38.5	0	0	15.2
Medium (HH)	40	6	1	0	47
Percent	41.7	23.1	50	0	37.6
Poor (HH)	11	5	0	0	16
Percent	11.4	19.2	0	0	12.8
Poorest (HH)	34	4	1	1	40
Percent	35.4	15.4	50	100	32
<b>HH number</b>	<b>96</b>	<b>26</b>	<b>2</b>	<b>1</b>	<b>125</b>
<b>Percent</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 4.20 further reveals that only 22 households (17.6 percent) in Kharaula have sufficient food to eat for 12 months or more. The rest need to find other sources of income for survival. About 36 percent of households produce food lasting less than six months. Of this number, 66.7 percent are



reportedly food self-sufficient for only three months. One of every four *Tharu* households is classified as very poor or suffering from extreme food shortages.

Although Pratappur VDC produces more grains than needed for consumption, more than 70 percent of the households do not produce enough food for the entire year. Many sell what they produce at the peak of harvest time and later purchase the same items at much higher prices from money earned through other sources such as services, daily wage labour and jobs in India.

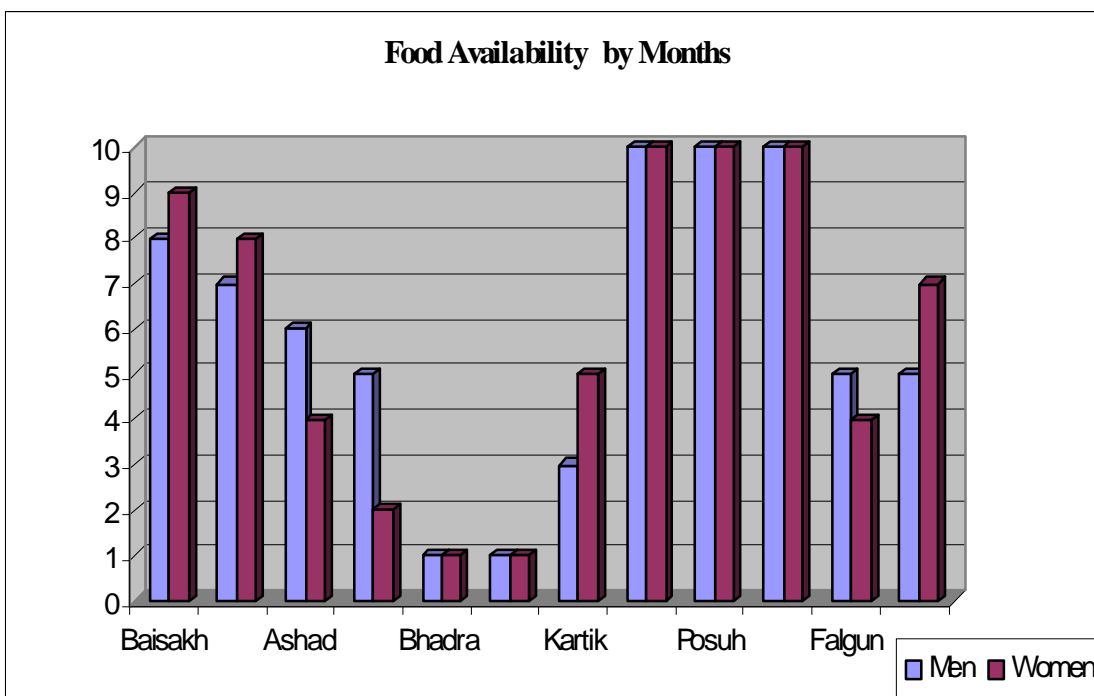
**Table 4.20: State of food sufficiency in Kharaula Village**

Food sufficiency	Ethnic distribution		Total		
	<i>Tharu</i>	<i>Brah./Chhetris</i>	<i>Magar</i>	DAG group	
Up to 3 months	24 (25.0)	4 (15.4)	1 (50)	1	30 (24.0)
4-6 months	10 (10.4)	5 (19.2)			15 (12.0)
6-9 months	51 (53.1)	6 (23.1)	1 (50)		58 (46.4)
12 months	9 (9.4)	7 (26.9)			16 (12.8)
More than 12 months	2 (2.1)	4 (15.4)			6 (4.8)
<b>Total</b>	<b>96 (100)</b>	<b>26 (100)</b>	<b>2 (100)</b>	<b>1 (100)</b>	<b>125 (100)</b>

Note: Figures in parentheses indicate percentages.

#### 4.3.5 Seasonal food availability

Male and female villagers were asked to illustrate the food availability situation over a course of 12 months calendar using bean seeds, where the maximum score per month was ten. A high score (e.g. seven or eight) meant the food availability situation was good while a low score meant it was poor. As shown in Figure 4.3, the situation in the village was revealed to be generally very critical for two months in a year – *Bhadra* and *Ashwin* – although there were food shortages in seven out of 12 months. In descending order, these months were *Jestha*, *Chaitra*, *Asadh*, *Falgun*, *Shrawan*, *Bhadra* and *Asadh*. Responses of women and men slightly differed with respect to the scale of the food shortage problem but there was no difference in perception with regard to the length of time.



**Figure 4.3: Food availability situation in Kharaula Village**

#### 4.3.6 Income and expenditure

Tables 4.21 and 4.22 illustrate the income sources and expenditure patterns of households by economic status (i.e. rich, medium and poor). While the contribution of livestock to the local economy was poor in Kharaula, the contribution of horticulture was almost nil.

**Table 4.21: Income sources of villagers by economic status in Kharaula Village**

Sources of income	Rich	Medium	Poor
Farming	75	50	15
Seasonal migration to India	5	35	60
Livestock raising	15	10	5
Cottage industry	5	5	-
Services (Public sector)	Negligible	Negligible	Negligible
Wage labour	-	Negligible	20
Business and contracts	5	-	-
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

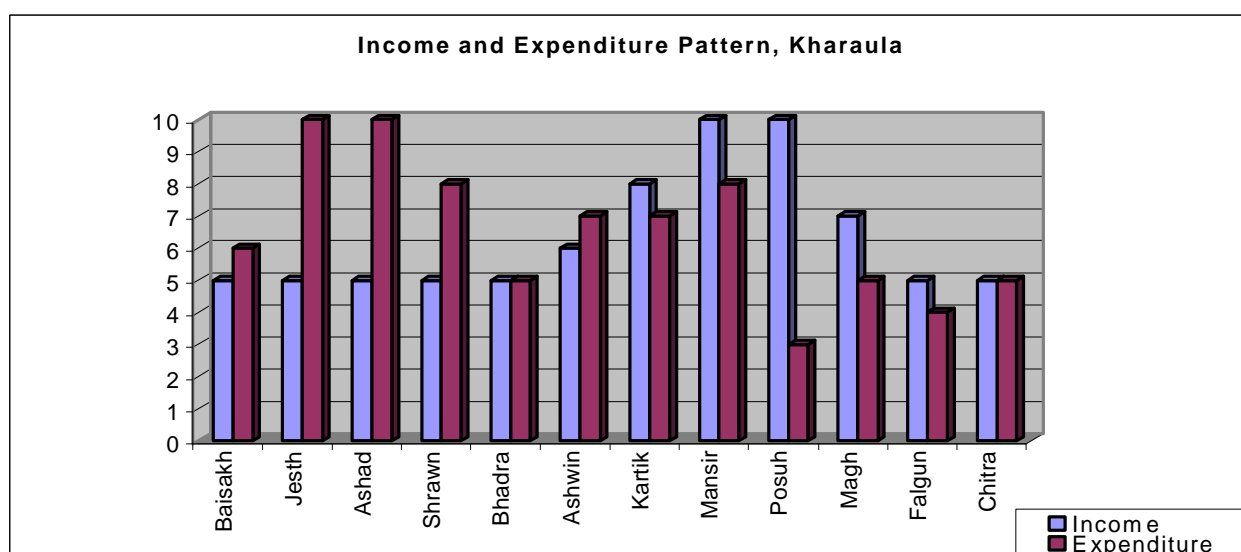
## Expenditures

Villagers were also asked to enumerate the sources of their expenditures – where they spent their income and for what purposes. As revealed in Table 4.10, people of Kharaula spent 75 percent of their income on food and, as stated earlier, poor people usually spend more on food.. Clothes (10 percent) and medical treatment (5 percent) came next to this on the spending list. Kharaula villagers invested very little in livestock. Since people have realized the importance of education, a substantial portion of expenditures (8 percent) goes to schooling.

**Table 4.22: Households expenditures by sector in Kharaula Village**

Sector/Area	Expenditures (%)
Food	65
Clothing	10
Schooling and education	8
Farming	5
Medical treatment	7
Celebrating festivals	3
Purchasing livestock	2
Miscellaneous (Purchasing ornaments etc.)	Negligible
<b>Total</b>	<b>100</b>

Figure 4.4 shows the seasonal differences in income and expenditures. Here, it can be seen that income exceeds expenditure in the months of *Kartik*, *Mansir*, *Poush*, *Magha* and *Falgun* because of less expenditures in farming and income from the sale of harvests. Expenditures in *Baisakh*, *Jestha*, *Ashad* and *Shrawan* are high since people spend more on farming and food items during these months.



**Figure 4.4: Seasonal income and expenditure pattern in Kharaula Village**

#### 4.3.7 Livelihood strategies

Table 4.23 summarizes the livelihood strategies of Kharaula residents by type of household based on economic class.

**Table 4.23: Livelihood strategies of Kharaula residents**

<b>Rich households</b>	<b>Medium</b>	<b>Poor households</b>
Business/contracts	Services	Working as bonded labour
Keeping bonded labour ( <i>Kamaiyas</i> )	Selling cereals	Services/labour
Services	Selling livestock and livestock products	Migrating seasonally to cities and towns in neighbouring India to find work
Selling food/cereals	Borrowing money from both institutional and informal sources (e.g. relatives and private money lenders)	Selling livestock and livestock products
Selling livestock and livestock products	Selling local wine in the village and Lamki market	Borrowing money from both institutional and informal sources (e.g. relatives and private money lenders)
Earning interest from cash and cereals lent to others	Cottage industries	Selling local wine in the village and Lamki market
Earning from cottage industry	-	Working at cottage industry enterprises as semi-skilled or unskilled labour

The above table presents very little options for the poor. Since borrowing money and finding jobs for daily wage labour is not easy in the village, the only option remaining for the poor is to leave the village to work in India.

#### 4.3.8 Credit

Similar to residents of Murma and Sokat, the people of Kharaula have no access to credit for food consumption, but have good access to credit for economic purposes or for earning additional sources of income. However, many poor villagers need loans particularly for the purchase of food during the lean months (i.e. July to October). Fortunately, residents have various sources of credit such as the Rural Development Bank (RDB), the SCDP, the ADBN, the Small Farmers' Cooperative Society Ltd. (SFCL) and the Group for International Solidarity (GRINSO). They hence borrow money from one institution, pay to another, and repeat the process. Financing as a way to enhance income was found to be an uncommon practice in the village.

Villagers usually need funds to send their children to school or to buy food. As the RDB provides loans only to women on group collateral, women turn to selling local wine at the nearby market to be able to pay their debts. During the PRA, women were found to be quite aware of the harmful effects of wine and the illegal nature of such a business. When asked why they do not undertake other types of businesses, many said the RDB requires weekly repayment of loans and no other business allows them to meet that requirement.

With regard to the availability of loans at commercial banks, respondents said there were no major problems except for collateral. Once they get a loan from a bank, it was reportedly easy for them to get another loan from the same financial institution in the future. The bank usually allows an increase in the loan amount to pay for the earlier loan as well as a change in the purpose of the loan based on what is available. If targets in both loan distribution and repayment are achieved, villagers will likely get the loan for which they have applied. Participants claim banks will also not trouble the borrower regarding loan misuse. Apparently, both the borrower and the bank have been meeting their targets in the past several years.

#### 4.3.9 Gender considerations

This section explores the gender considerations in food and agriculture focusing on issues such as household food distribution, division of labour, mobility, daily activity schedules, workloads and decision-making.

#### **Daily food calendar and food distribution**

To determine who suffers most in the family in the event of food shortages, female participants were asked several questions related to food consumption in the family. The study reveals that in *Terai* villages such as Kharaula it is the women who suffer first when food supply is low. This is because men usually go to the fields early while women either carry food to the fields or serve them on their return to home. Men go home to eat at noon and return to the field to work after 1 to 2 hours rest. They are therefore given sufficient food to eat. As women eat last in the family, they tend to eat less when cooked food is not sufficient or if a guest or relative arrives at mealtime. As dictated by culture, women will not eat before offering food to the guest or relative while men usually eat with the guest. Children get priority in the distribution of food and usually eat before the adults do.

When asked about the food and dietary habits, villagers said their normal diet consists of rice with pulses and vegetables. A wide range of vegetables is available in the village. Whereas rich people eat plenty of vegetables, the poor usually eat only little and mainly those vegetables grown in the kitchen garden, if at all. Participants said preparing a different diet for pregnant and lactating women is not a practice and that expectant mothers normally eat the same food as other family members. While poor households cannot afford to provide extra food for pregnant and breastfeeding mothers, rich households are also not very specific about dietary needs of women at critical life stages.

As shown in Table 4.24, slight differences were found regarding daily food consumption of rich, medium and poor households. Rich and medium households eat rice twice a day almost regularly while poor households eat rice and bread almost fifty-fifty. In general, the people of Pratappur eat three times a day with lunch taken around 12 a.m. to 1 p.m. and dinner at about 8 to 9 p.m. Farming activities usually start in the morning and in the afternoon after snacks. People eat a light breakfast, usually at about 7 to 8 a.m. when they have heavy work pressures or are working in the farm. The main difference among economic classes is the quantity of food available in each type of household.

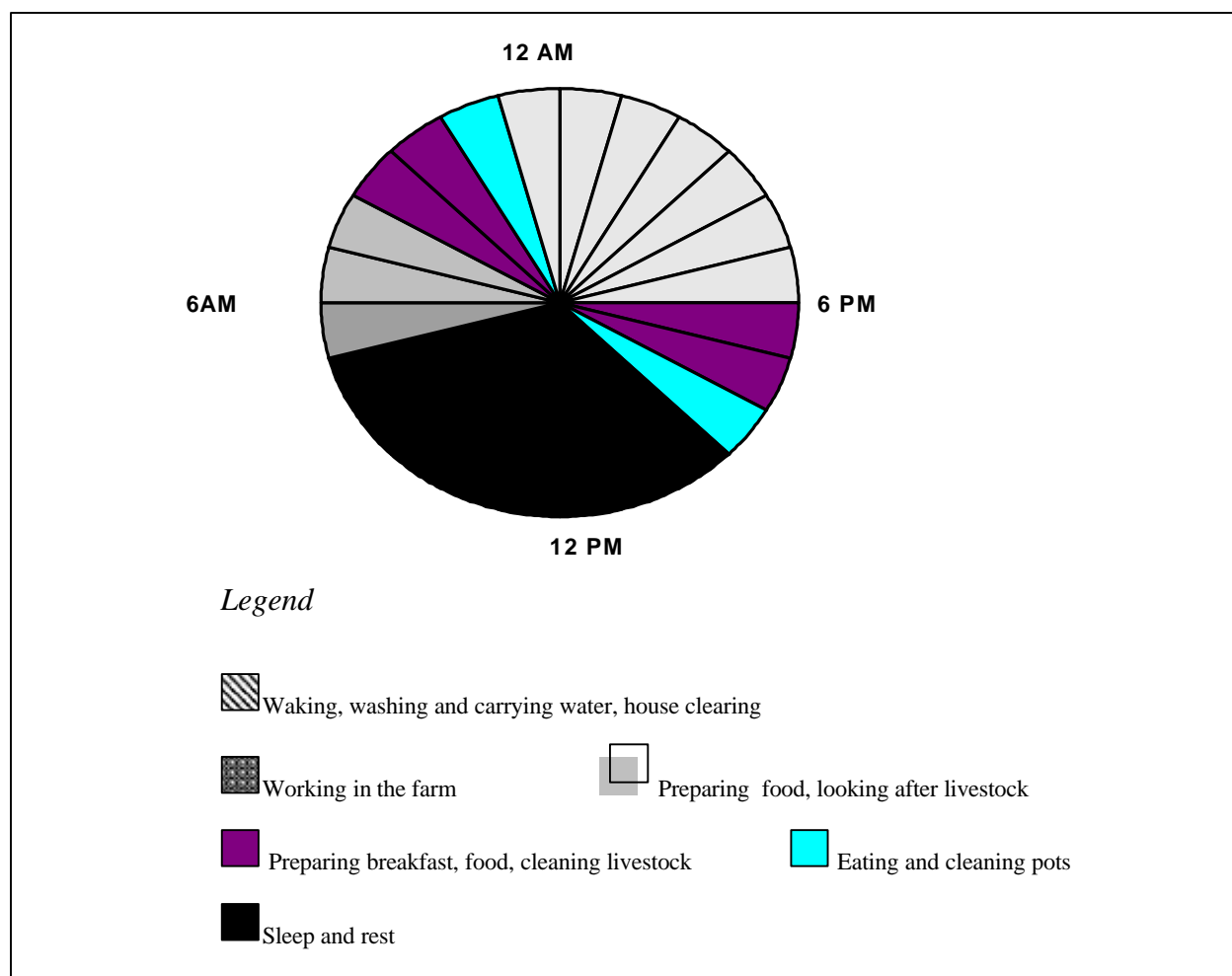
**Table 4.24 Daily food schedule, Kharaula Village**

<b>Econ. status</b>	<b>Morning (7 to 8 a.m.)</b>	<b>Day (12 a.m. to 1 p.m.)</b>	<b>Evening (8 to 9 p.m.)</b>
<b>Rich</b>	Bread or beaten rice Curd Vegetables	Rice Pulses Vegetables Pickles	Rice Pulses Vegetables (Veg./Non-veg.) Pickles
<b>Medium</b>	Bread or Beaten rice Curd Vegetables	Rice Pulse Vegetables Pickles	Rice Pulse Vegetables (Veg./Non-veg.)
<b>Poor</b>	Bread or Beaten rice Vegetables, if available	Rice Pulse Vegetables	Rice Pulse Vegetables (Veg./Non-veg.)

### Daily activity schedule

Figure 4.5 depicts the 24-hour activity schedule for a typical day drawn by women<sup>7</sup> in Kharaula village to assess how much time they spend daily in farming. Table 4.18 shows that women generally work about 16 hours a day, which is slightly less than the labour hours of women in Mugu and Achham. This indicates that the life of women in the hills and mountains is more difficult than the life of *Terai* women. In farming, women of Kharaula work almost 7 hours a day. While women from rich households do not work in the farms, those from middle and poor income families need to do so to earn their livelihood. While women from middle class families work only in their farms, poor women work for daily wage. This suggests that unless gender-sensitive methodologies are designed to address women's issues and enhance their access to technology development and dissemination, the goal of improving the food security situation and livelihood conditions is unlikely.

<sup>7</sup> As the first PRA of this study was conducted in Pratappur, the importance of the 24-hour activity schedule of the male villagers could not be realized. After Pratappur PRA, men's 24-hour activity schedule was prepared in other study areas



**Figure 4.5: The 24-hour calendar of women in Kharaula Village**

Table 4.25 below shows women's daily productive and reproductive tasks. This illustrates that some of the activities women carry out are particularly labour intensive and physically demanding.

**Table 4.25: Gender-differentiated daily activity schedule in Kharaula Village**

Nature of works	Hours	Women
Productive and reproductive work (Total working hours)	Hours	16
	%	67
Sleep/rest	Hours	8
	%	33
Reproductive work (Fetching water, cooking, carrying babies, cleaning houses, shed clearing)	Hours	9
	%	63
Productive work (Farming activities)	Hours	7
	%	37

## **Gender-disaggregated division of labour**

Having explored how long women work in a day, male and female PRA participants were asked to examine gender-disaggregated household activities as well as the division of labour in relation to agriculture (Table 4.27). The study reveals that women carry out most of the household chores such as cleaning, washing, childcare, cooking and farming.

## **Workload**

The study reveals that the workload of both men and women in Kharaula is high during the months of *Asadh*, *Shrawan*, *Kartik* and *Marga* (Figure 4.6 and 4.7). While *Kartik* and *Marga* are harvest months for rice, *Asadh* and *Shrawan* are planting seasons for the crop. Women are busier in the months of *Asadh*, *Kartik* and *Magha* than men because in *Asadh* women are usually engaged in transplanting of rice. Although both men and women share work equally, their workloads vary by month, the size of the family and landholding and seasonal out-migration of males.

## **Mobility**

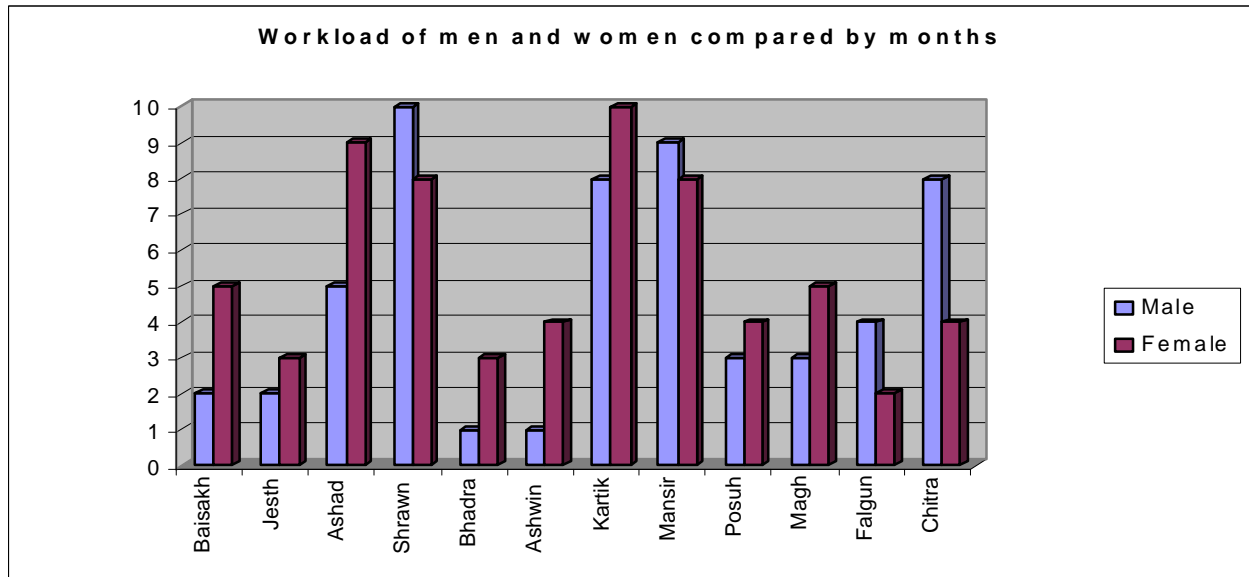
With a view to assessing resource access by gender, both men and women were asked to sketch their mobility map. Table 4.28 describes the place, purposes and frequency of travel by women and men. Women were found to be confined mostly to farms, forests, the Lamki market, Tikapur, Dhangarhi (the district headquarters), Mahendra Nagar (Kanchanpur district headquarters) and temples and religious places such as Ghodhodi Tal in the nearby VDC.

Although many women said they frequently visit the RDB branch in Lamki and SCDP field office in Baliya, only a few said that they have traveled to the ASC and the LSC in the nearby Chua VDC to garner advice on farming and cattle and buffalo treatment. It should be noted that Chua VDC is nearer in distance than Baliya VDC. While this reflects women's weak access to agricultural extension activities, it also confirms that women are likely to be bypassed by development efforts unless they are specifically targeted as has been the strategy of SCDP.

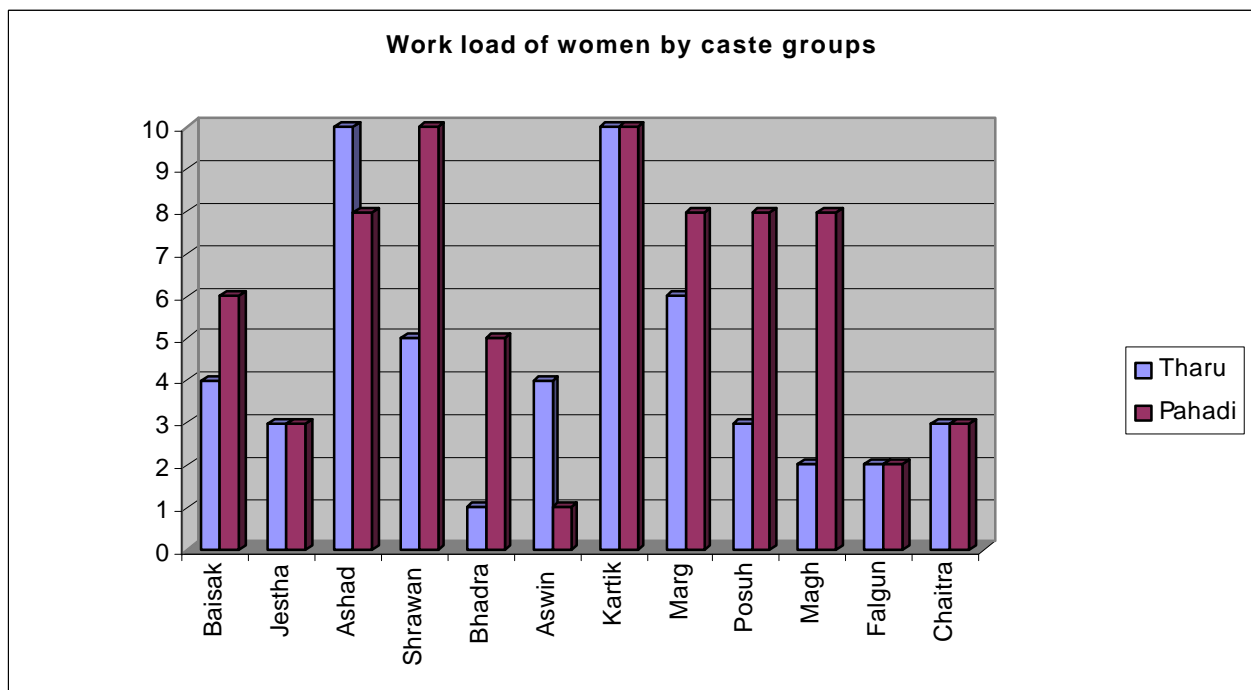
## **Decision-making**

To assess the status of women and their access to and control over resources, female participants were asked who decides on issues such as the education of children, provision of medical treatment, selling and buying of land, farming and family planning. Table 4.29, which presents the responses by subject areas, reveals that women usually dominate decisions on food-related issues while men lord in over in areas related to the education and health of children, land matters and the spending of cash income. Interestingly, all PRA participants said women and men jointly make decisions on farm practices, namely, seed selection, sowing, weeding and harvesting. A majority of women (80 percent) said joint decisions were also made on family planning issues.





**Figure 4.6: Work load of men and women by months, Kharaula**



**Figure 4.7: Workload of women compared by months and caste groups**

**Table 4.26: Gender-disaggregated household chores in Pratappur**

Months \ Activity	<i>Baisakh</i>	<i>Jestha</i>	<i>Ashad</i>	<i>Srawan</i>	<i>Bhadra</i>	<i>Ashwin</i>	<i>Kartik</i>	<i>Mansir</i>	<i>Poush</i>	<i>Magh</i>	<i>Falgun</i>	<i>Chaitra</i>
<b>A. Household tasks</b>												
<b>Cooking</b>	●	—————										●
<b>Cleaning and washing</b>	●○	—————										●○
<b>Fetching Water</b>	●	—————										●
<b>Baby care and health</b>	●▲○	—————										○▲●
<b>B. Economic activities</b>												
<b>Working in India</b>	▲	—————										▲

*Legends*

- ▲ Male
- Female
- Children

Table 4.27: Gender-disaggregated farming calendar of Kharaula Village

A. Crops												
Months	Baisakh	Jestha	Ashad	Srawan	Bhadra	Ashwin	Kartik	Mansir	Poush	Magh	Falgun	Chaitra
Activity												
Rice		BP ← → LP ● ▲	▲ P/M ● ● ▲		W/I ▲ ● ● ▲	▲ ● ← H → ▲ ●						
Sugar cane	▲ SF M ●	▲ W ● ▲	● LP ●	▲ H ● ● ▲					▲ ● ●	LP ▲ ●	P ● ▲ →	
Wheat	H ▲ ● ● ▲						▲ LP ▲ ● ● ▲	▲ P ▲ ● ● ▲		I M ● ● ▲		▲ ● ● H ▲
Pulses	▲ → ●					▲ LP ▲	▲ P ▲ ● ● ▲					▲ ● H ←
Potato						▲ LP ▲	▲ ● P ▲	▲ I/M ▲	▲ SF ▲	▲ H ● ● ▲		
Mustard						▲ LP ▲	▲ P ▲ ● ● ▲			▲ M I ● ● ▲		▲ H ▲ ● ● ▲
B Cattle-keeping/Carrying fodder												
Grass fodder	← → ▲ ● ○											▲ ● ○
Shed cleaning	← → ▲ ●											▲ ●
Grazing	← → ▲ ● ○											▲ ● ○
Feeding animals	← → ▲ ● ○											▲ ● ○

Legend:

▲	Male	LP	Land preparation	I	Irrigation
●	Female	BP	Seed bed preparation	M	Manuring
○	Children	P	Planting	W	Weeding
		H	Harvesting	SF	Soil filling

**Table 4.28: Details on mobility of women in Kharaula Village**

Place	Major Reasons	Frequency
Farm	– Agricultural production	Every day
Lamki Bajar	– To purchase daily household items – To sell farm produce and wine	Frequently
Dhangarhi, District Headquarters, Kailali	– Legal work – To accompany husband/relatives – Marketing	Frequently
Mahendra Nagar,/Tikapur	– To accompany husband/relatives – Marketing	Occasionally
Relatives	– Social affairs /festivals	Sometimes
Temples/ Religious places	– For worship	Occasionally
VDC	– To get VDC recommendations as required – To participate in SCDP activities	Occasionally
ASCs/LSCs	– Farming advice and training	Rarely

**Table 4.29: Responses of women on decision-making in Kharaula Village**

Decision areas	(N=20)		
	Men	Female	Both
Education of children	60	10	30
Health of children	-	100	
Land	100	-	-
Food	-	100	-
Cash/money	80	5	15
Farming activities	-	-	100
Irrigation canal repair /maintenance	85	10	5
Family planning	15	5	80

#### 4.3.10 Institutional mapping

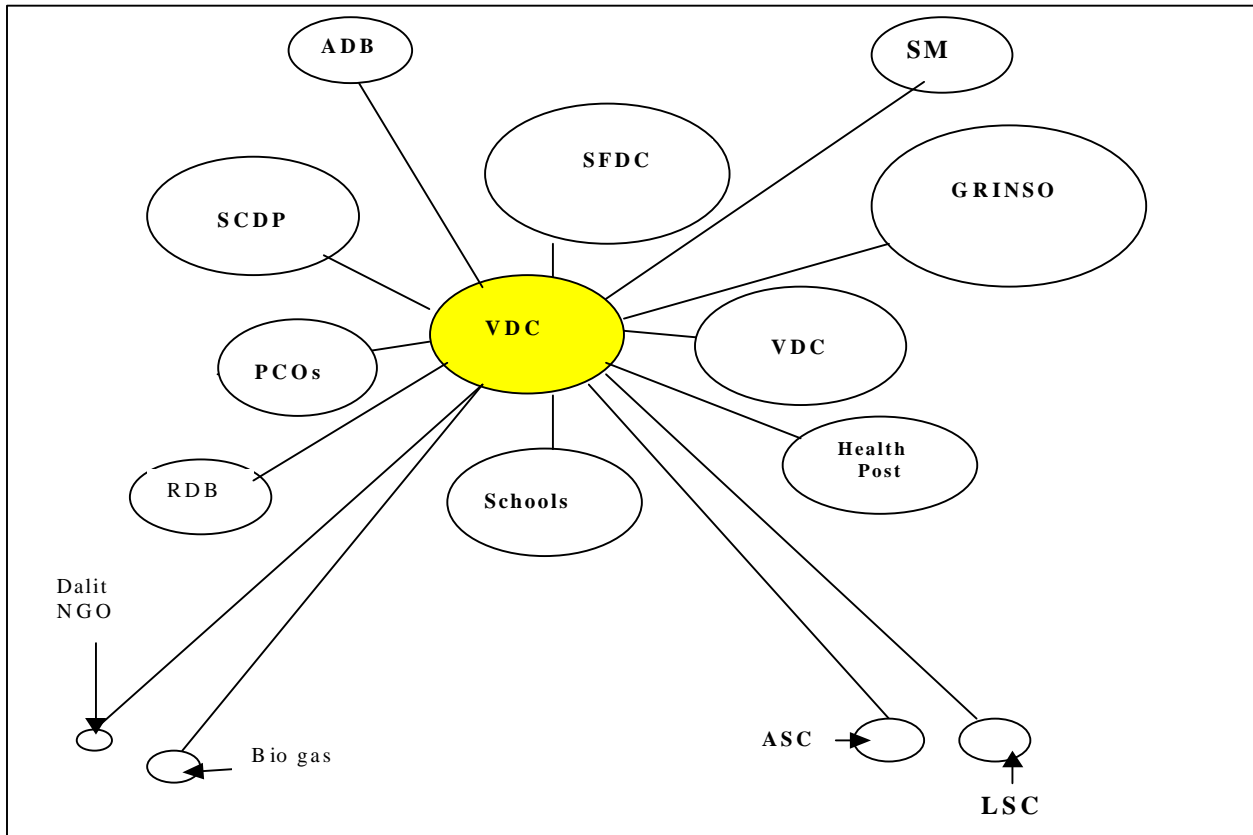
As stated earlier, a number of institutions are engaged in the development of Pratappur VDC. While some are physically present in the VDC, some are not. A long list of institutions is an indication of the presence of multiple organizations in the VDC. Of these, some are GOs, some are NGOs and some are multilateral donor agency supported organizations. As seen in Table 4. 30, there exist multiple credit-oriented organizations in Pratappur VDC, for example, the ADBN, RDB and SFCL. Apart from these three organizations, UNDP's SCDP, *Dalit* Services Committee and GRINSO also operate saving and credit programmes in the village and provide credit to the people of Pratappur.

**Table 4.30: Institutions operating in Pratappur VDC**

<b>Name of the organization</b>	<b>Type</b>	<b>Location</b>	<b>Major functions</b>
VDC	LEB/ GO	VDC	Local development/ infrastructure improvement
School	Public	VDC	Provide educational opportunities to boys and girls (formal education)
GRINSO	NGO	VDC	Economic and social empowerment of the poor with focus on bonded labourers and poorest of the poor Organize saving and credit groups
Small Farmers Cooperative, Ltd. (Registered under the Cooperative Societies Act of 1992)- a federation of small farmer groups formed earlier under ADBN's SFDP	Coop	VDC	Mobilize saving and credit programmes, provide loans to members on group basis fixed by SFCL, which receives bulk loan from ADBN.
Subhealth post	GO	VDC	Primary health treatment
Public Communications Office	GO	VDC	Communications
Agriculture Development Bank (ADB)	Public	District	Provide credit to farmers on individual and group basis for farming, small enterprises and businesses
Basulinge Sugar Factory	GO	Chuha VDC	Sugar production
Rural Development Bank (RDB)	Public	District	Provide credit to marginal and landless farmers (women) to operate small-scale businesses and enterprises such as buffalo keeping, village teashops, village groceries, kitchen gardening on a group basis.
Agriculture Service Centre (ASC)	GO	Chuha VDC	Agricultural technologies (cereals, cash crops, fisheries and horticulture) transfer (training and demonstration)
Livestock Service Centre (LSC)	GO	Chuha VDC	Livestock development and animal treatment services
Sustainable Community Development Programme. (Three components of SCDP includes economic, environment and social development)	Donor assisted /UNDP	District	Implement income-generating programmes in partnership with VDC, operate saving and credit groups, supports farmers to bring improved seeds from Pantnagar India through credit.
Dalit Services Society	NGO	VDC	Socio-economic development of the Dalit community
Biogas Support Programme	Pvt.	District	Provide technical assistance in the installation of biogas plants in individual and group basis.

After the identification of key institutions operating in the VDC, participants drew different sizes of circles for each organization based on how they perceive the importance of each and located these in

the map in terms of closeness with them or the community. Figure 4.8 is the Venn diagram drawn by villagers.



**Figure 4.8: Perception of institutional networks in Kharaula Village**

Although GRINSO had the largest circle in terms of importance given its role in assisting the poorest of the poor through economic and social empowerment, it was placed farthest from the community. This was partly because there were more poor people than rich people during the PRA and partly because of its present relationship with the villagers. The circle for ASCs and LSCs were not only small, implying less important, but they were also placed farthest, indicating poor contact with the local villagers. The diagram illustrates the relatively poor access of the people of Pratappur to agriculture and livestock extension services available through government sources.

Although there were multiple credit organizations operating in the VDC, farmers could not identify linkages or relationships among them. This suggests poor or no linkages or coordination among credit organizations. The circle constructed for ADBN was not only one of the smallest, its position in the map was farthest from the community as well. Many participants remarked that the bank rarely distributes timely credit and that getting loans is difficult. A few of the poor residents said the ADBN serves only the rich. The SFCL was perceived as one of most important organizations in the VDC and its relationship with the community was said to be close. It was followed by the village school and the SCDP. Table 4.31 summarizes how villagers ranked the different institutions in terms of importance and relationships.

**Table 4.31: Villagers’ perceptions on the importance of and their relationship with institutions in Kharaula Village**

<b>Institutions</b>	<b>Importance (Rank)</b>	<b>Relationship</b>
GRINSO	First	Far
Small Farmers Cooperative Ltd.	Second	Most Nearest
VDC	Third	Most Nearest
Sustainable Community Development Programme (SCDP)	Third	Near
School	Fourth	Very Near
Health post	Fifth	Near
Public Communication Office (PCO)	Sixth	Very Near
Rural Development Bank (RDB)	Seven	Near
Sugar mill	Eighth	Very Far
Agriculture Development Bank (ADBN)	Ninth	Very Far
Agriculture Service Centre (ASC)	Tenth	Farthest
Livestock Service Centre (LSC)	Tenth	Farthest
Biogas Support Programme	Eleven	Farthest
Dalit Services Society	Twelve	Farthest

#### 4.3.11 People’s perceptions on changes

In order to know what changes have occurred in the village and how people perceive them, the participants were asked the differences they have experienced over the last ten years. Table 4.32 presents changes in the villages as noted by the villagers.

**Table 4.32: Overview of changes perceived by villagers in Kharaula Village**

<b>Changes</b>	<b>Reasons for Change</b>
Increase in area under wheat crop	<ul style="list-style-type: none"> <li>– Bridge at Karnali River (Chisapani) 7 to 8 years ago; Pratappur linked with Nepalgunj and rest of Nepal</li> <li>– Change in feed habit due to in-migration of hill people</li> <li>– Installation of STWs</li> <li>– Agricultural development in India's Pantanagar</li> </ul>
Increase in use of fertilizer and pesticides over the last ten years	<ul style="list-style-type: none"> <li>– Increased access to agricultural extension services</li> <li>– Use of modern varieties</li> <li>– Expansion of wheat cultivation</li> <li>– Installation of shallow tubewells</li> <li>– Agricultural development in India's Pantanagar</li> </ul>
Sugar cane cultivation	<ul style="list-style-type: none"> <li>– Establishment of Basulinga Sugar Factory at Chuha VDC (bordering VDC) 3 to 4 years ago</li> </ul>
Educational development	<ul style="list-style-type: none"> <li>– Schools opened and supported by the Government</li> </ul>
Shift from maize to rice farming	<ul style="list-style-type: none"> <li>– In-migration of people from neighbouring hill districts due to the Land Reform Programme of 1964, the Malaria Eradication Programme of 1960s and the Government's Resettlement Programme initiated in 1976</li> </ul>
Increase in people's awareness level	<ul style="list-style-type: none"> <li>– NGOs such as NEWAH, GRINSO, SCDP, Dalit Services Society</li> <li>– ADBN's Small Farmers Development Programme</li> </ul>
Irrigation facilities improvement	<ul style="list-style-type: none"> <li>– Government support and subsidy to the installation of STWs</li> </ul>
Drinking water facilities improvement	<ul style="list-style-type: none"> <li>– Support of an NGO named NEWAH, VDC and DDC available for the installation drinking water tap stands</li> </ul>
Transport and communication facilities improvement	<ul style="list-style-type: none"> <li>– Construction of Mahendra Raj Marga, Chisapani bridge</li> <li>– Linked Pratappur VDC with Mahendra Raj Marga through a rural road constructed through GTZ's Food for Work Programme (Rural Infrastructure Improvement Programme)</li> </ul>
Credit facilities improvement	<ul style="list-style-type: none"> <li>– Credit facilities available through: ADBN, SFCL, RDB, GRINSO and the Dalit Services Society</li> </ul>

#### 4.3.12 Problems and their prioritization

A pairwise ranking technique was used to elicit local perceptions of the most important problems villagers face in agricultural development. During the PRA, separate groups of women and men were asked to list and then rank their most pressing agriculture problems. Table 4.33 lists the problems mentioned by women and men and their corresponding priorities. This table reveals that the problems of agriculture remain almost similar to both groups.



**Table 4.33: Agriculture-related problems and prioritization of people in Kharaula Village**

<b>Problems</b>	<b>Men's ranking</b>	<b>Women's Ranking</b>
Lack of market facilities for agriculture products	First	Seven
Lack of irrigation facilities	Second	Fifth
Lack of credit	Second	Second
Lack of technical services	Second	First
Lack of timely availability of chemical fertilizers	Fourth	Sixth
Lack of improved seeds	Third	Fourth
Lack of pesticides and herbicides	Fifth	–
Lack of modern agriculture tools	–	Third

However, for women, the lack of appropriate agriculture tools and equipment emerged as the second most important problem, whereas this was not mentioned by men group. Despite the village being linked with the all-weather national highway at Mahendra Raj Marga and Dhangarhi, district headquarters, men cited the lack of market facilities for their agricultural products as the most serious problem.

Having seen many wholesale grain purchasers (*Kantas*) present in the village, they were asked what they meant by the lack of markets and it became evident during discussions that they were referring to price. Many complained about the low price of rice, reporting how farmers incurred heavy losses in wheat and rice production during the year as the government did not announce support prices for these crops through NFC, as had been the practice in the previous years. They allegedly suffer because of lower produce prices at Indian border cities, where production costs were lower owing to cheaper production inputs such as seeds, fertilizers and pesticides and high per hectare crop yield due to a regular supply of irrigation water and good technical support services from agricultural extension organizations. Many found it difficult to compete with Indian markets in this situation.

Farmers raised issues relating to the withdrawal of fertilizer subsidies and unavailability of fertilizers during the peak crop season. Some say they are unable to keep their land fallow or to cultivate the land because farming results in a net loss for them. The problem of seasonal variation in prices of foodgrains was also brought up. After the marketing problem, other problems raised by farmers were the lack of irrigation facilities, credit and technical support services. The results of pairwise problem identification revealed equal ranking for these three problems.

It was surprising to find credit availability identified as a problem area despite the presence of multiple credit organizations in the village. On the other hand, the lack of technical support services was the first priority problem identified by women. Figures in the table reveal that people's access to development opportunities has increased significantly in Pratappur VDC over the last decade.

When asked why credit was a problem for them, they claim group-based loans given by organizations such as the SCDP and the Grameen Bank are given only to its members and that the amount is typically not sufficient for the enterprise. A person would sometimes take loans from one organization in order to pay to others. ADBN, meanwhile, does not grant timely loans. Getting loan from ADBN is said to be difficult for the poor.

#### **4.3.13 Key findings and conclusions**

This section summarizes the main findings and conclusions of the PRA conducted in Kharaula VDC of Kailali District which represents the newly opened *Terai* district. Despite improved transport and communication systems and potential for high production, the agricultural situation in Pratappur was not encouraging. The study reveals that government's support in favour of enhancing agricultural production is inadequate and people hardly appreciated any efforts of the Government.

The study failed to trace any positive or negative effects of the present economic liberalization policy of the government during the PRA in either the institutional analysis or the problem prioritization processes. Farmers still face traditional agricultural development problems such as the lack of improved seeds, fertilizers and equipment. People's access to external inputs such as chemical fertilizers, seeds, veterinary medicines and credit was relatively poor.

Women had less contact with the outside world as compared to men and their mobility was generally confined within the village and district. However, their daily workload was high and they are the last priority in terms of food distribution within the households.

Although multiple credit agencies were found working in the VDC, villagers could not trace any sort of coordination or linkage among these organizations. These institutions have yet to capitalize on the importance of complementarities.

Indian producers have dominated the market for food crops because of their lower prices. Hence, farming in Kharaula Village and the rest of the *Terai* region has become less attractive because of high production costs and the low prices earned from their produce.

## 5. SUNSARI DISTRICT

### 5.1 District background

#### 5.1.1 Location

Sunsari, another *Terai* district, is located in the Koshi Zone of the EDR and is bordered by Morang in the east, Saptari and Uday Pur districts of Dhankuta in the north and India's Bihar province in the south. The district has three municipalities and 49 VDCs. The altitude ranges from 152 m asl to 914 m. Named after Sursand River, which flows near the centre of the district, Sunsari District has three distinct physiographic regions namely the hilly region in the north, *Chure* or *Bhavar* in the central part and the *Terai* plains in the southern part. Of the total district area, approximately 30 percent lies in the hilly region. The climate of the district ranges from tropical to subtropical.

#### 5.1.2 Land resources

Sunsari District has a total land area of 127 076 ha, of which 64.5 (81 944 ha) comprises agricultural land. Forest area covers 18.3 percent. This suggests overuse of forest land for agricultural purposes. The land use pattern of the district is shown in Table 5.1.

**Table 5.1 Land use pattern of Sunsari district**

Land use type	Area (ha)
Agricultural land	81 944 (64.5)
Forest	23 204 (18.3)
Pasture	4 912 (3.9)
Others	17 016 (13.4)
<b>Total Area</b>	<b>127 076 (100)</b>

Figures in parenthesis denote percent.

Source: Nepal District Profile, National Research Associate 1999.

Of the total 81 944 ha of agricultural land, 91 percent (74 541 ha) is cultivated. In terms of irrigation, Sunsari District ranks among the first in Nepal. More than 92 percent of cultivated land in Sunsari is irrigated. The World Bank-funded Morang-Sunsari irrigation project has been in operation in this district in the last two decades. The agriculture land use pattern of Sunsari District is summarized in Table 5.2.

**Table 5.2 Agriculture land use pattern of Sunsari District**

<b>Agricultural Land Use Pattern</b>	<b>Area Hectare (ha)</b>
Cultivated land	74 541 (91.0)
Irrigated	68 565 (92.0)
Rainfed	5 976 (8.0)
Uncultivated land	7 403 (9.0)
<b>Total agricultural land</b>	<b>81 944 (100)</b>

Figures in parenthesis denote percent.

Source: Nepal District Profile, National Research Associate 1999.

### 5.1.3 Demography

Between the census years of 1981 and 1991 the population of Sunsari increased from 344 594 to 463 481 with an average annual growth of 2.96 percent. In 1991, the average household size was 5.9 persons. Of the total population, below 40 percent people are estimated to be economically active (Table 5.3). Key features of the district are given below:

**Table 5.3: Population and related key features of Sunsari District**

<b>Particulars</b>	<b>Sunsari</b>
Population (no), 1991	<b>463 481</b>
Male	234 217
Female	229 264
Total no of household	84 492
Average household size	5.5
Child mortality rate, by ,000 live births	77
Economically active Population (in number)	159 356
Economically Active Population in Agriculture (no)	93 454 (58.64 %)
<b>Educational variables</b>	
<b>Adult literacy ratio (%), 1996</b>	<b>45.18</b>
Male	65.01
Female	25.73
<b>Educational attainment index</b>	<b>0.364</b>
Means years of schooling	2.834
Male	3.427
Female	1.924
Population Growth Rate in Percentage	2.96
Population Density Per Sq. Km	368.7
<b>Life expectancy (yrs), 1996</b>	<b>60.5</b>
Male	60.5
Female	58.3

As revealed Table 5.1, child mortality rate is low in Sunsari District at only 77 per 1 000 live births while life expectancy rate is high. However, men live longer than women on average. In 1996, the life expectancy rate of men was 60.5 years and that of women was 58.3 years.

Adult literacy rate is also high at 65 percent among males and 25.73 percent among females. The majority of the population of the district comes from the *Brahmin, Chhetry, Rai, Limbu, Nawar, Tharu* and *Terai* caste. As revealed in the 1991 census, the gross population density per sq km of the total district area, agriculture land and cultivated land are 364.7, 619.0 and 563.2 respectively. Cultivated land per household is 0.88 ha.

Tables 5.4 and 5.5 present the population of Sunsari District by literacy status and by major occupation. Overall literacy in the district is 44.5 percent (29.8 percent among females). This figure is quite high.

**Table 5.4: Population (6 years and above) by literacy status and sex in Sunsari District**

<b>Literacy status</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Literate	113 792	56 586	170 378
Illiterate	78 635	132 296	210 931
Not stated	677	936	1 613
<b>Total</b>	<b>193 104</b>	<b>189 818</b>	<b>382 922</b>

Source: CBS, 1999.

**Table 5.5: Population distribution (10 years of age and above) by major occupation in Sunsari District**

<b>Major occupation</b>	<b>Number</b>	<b>Percent</b>
Farming	93 454	58.7
Service	32 379	20.3
Professionals/technical worker	3 137	1.9
Productive labour work	10 949	6.9
Sales worker	10 184	6.4
Clerical worker	2 141	1.3
Administrative worker	607	0.4
Others	5 852	3.7
Occupation not stated	653	0.4
<b>Total</b>	<b>159 356</b>	<b>100</b>

Source: CBS, 1999.

Of the total economically active population (10 years and above), 58.7 percent are engaged in agriculture followed by 20.3 percent are in the service profession, 6.9 percent render productive labour while 6.4 percent are sales workers. This indicates the overwhelming importance of the agriculture sector in the district. According to a report by ICIMOD (1997), the ratio of labour force (i.e. economically active 15 years old and above) engaged in non-agriculture to those engaged in agriculture is 63.95.

#### 5.1.4 Socio-economic indicators

Table 5.6 presents the main socio-economic indicators of the district indicating its positive rank among the 75 districts of Nepal.

**Table 5.6: Major socio-economic indicators of Sunsari District**

Indicators	District Position	Remark
Poverty and Deprivation Situation Rank	52	Best
Human Development Index (rank)	10	High
Gender-adjusted HDI (rank)	9	High
Women Empowerment Index	52	Best
Natural Resources Endowment Index (rank)	72	Best
Socio-economic Infrastructure Development Index	62	Best
Households with less than 0.5 hectare farm size (%)	20.6	Best

Amahibelaha VDC of Sunsari District was selected for this study. Sunsari District is composed of 49 VDCs and three municipalities. The following section briefly describes this VDC.

#### 5.1.5 Agriculture and food situation

##### **Food self-sufficiency and agricultural production**

Like other *Terai* districts of Nepal, Sunsari is a food self-sufficient district. It produces enough food to provide 3 024 calories per capita per day or more than the daily requirement (2 410 cal/day). Table 5.7 shows the food self-sufficiency situation in the district as reported by the MOAC. The figures below show that the district is self-sufficient in terms of food production and is in fact feeding neighbouring food deficit hills and mountain districts.

**Table 5.7: State of food sufficiency, Sunsari**

Variables	1995/95	1995/96	1996/97	1997/98
Population (Est. no)	530 623	546 541	547 196	562 271
Total Edible Production (mt)	90 908	111 601	118 135	121 310
Requirements (mt)	96 043	98 924	99 042	101 771
Surplus/Deficits (mt)	-5135	12 677	19 093	19 539
Surplus/Deficit percentage (%)	-5.37	12.8	19.2	19.2

### 5.1.6 Agricultural input use

Table 5.8 below shows the distribution of seeds and fertilizers over the last five years.

**Table 5.8: Annual sales of chemical fertilizer and seeds in Sunsari district**

Year	Fertilizer (mt)				Seeds (mt)			
	Urea	DAP	MOP	Total	Rice	Wheat	Maize	Total
1996/97	2545.9	1911.0	178.6	4635.5	10.3	410.1	1.8	422.2
1998/99	1612.2	1119.9	172.7	2904.8	16.1	76.9	7.3	99.3
1999/00	1160.3	927.5	0.0	2087.8	0	0	0	0

In Table 5.9 compares input use in the district before and after liberalization of the fertilizer trade in 1997 or before and after the APP.

**Table 5.9: Changes in input use in Sunsari district before and after fertilizer trade liberalization.**

Inputs	Change in after situation (%)
Irrigated area	6.35
Fertilizer use	-18.67
Agriculture credit	20.04
Improved seeds	-37.04

Source: Statistical Information on Nepalese Agriculture, ASD, MOAC, 1997 &1999

Although the above table displays a sudden decrease in the use of fertilizers after trade deregulation in 1997, farmers reported no shortages after 1998. As stated in Chapter 4, most of the private importers who imported urea with government subsidies have been distributing fertilizers in Morang and Sunsari districts. Key informants indicated that after deregulation, urea fertilizers were imported by private companies such as NB International, Manoj International, Chandanbala International and Bhudeo International. In the beginning, farmers were reportedly reluctant to buy fertilizers imported by private sector as they were wary of product quality. However, they had no complaints after the harvest.

The above table does not reflect actual fertilizer use in the district. Apart from urea imported by the authorized private importers, Sunsari District received a lot of fertilizers from the neighbouring districts of India through the cross-border trade also. Due to the open and porous border between the two countries, it was very difficult to estimate the amount of fertilizers, which had flown to Nepal. According to many respondents, about 40 to 50 percent of demand in Sunsari District is met by fertilizers entering Nepal through informal sources (i.e. cross-border trade). When asked how trend was in cross-border flow of fertilizers in recent years, all respondents claimed the amount has continuously increased after 1998 despite warnings about the inferior quality of such fertilizers. It was also reported that buyers have been cheated in some occasions with the spurious nature of fertilizers and that a few retailers often

sold different grades of mixed and compound fertilizers at much more higher prices, passing these off as DAP.

Nevertheless, many farmers expressed their satisfaction over the deregulation because they no longer had to stand in queue or spend days in search of fertilizers. However, many questioned the prices of fertilizers in Nepal and also demanded subsidies. Many farmers were aware that the Government of India subsidizes fertilizers to bring down retail prices. The supply of potassium fertilizers was constrained after deregulation because neither AIC nor the private sector imported muriate of potash during that period. Due to a government subsidy on urea, both AIC and private importers were heavily engaged in the importation of urea in the beginning. Likewise, private importers began to import DAP soon after AIC revised its sale prices to reflect actual costs of procurement and distribution in September 1999.

#### 5.1.7 Organizations responsible for the development of agriculture in the district

The types and number of organizations directly responsible for agricultural development, particularly concerning matters of food security, are given in Table 5.10.

**Table 5.10: Agriculture-related line agencies in Sunsari district**

Name	Offices present	
	District HQ	Field/VDC
District Agriculture Development Office (DADO)	1	15 (Service centres and Subcentres)
District Livestock Services Office (DLSO)	1	15
District Irrigation Office (DIO)	1	20 (Projects)
Agriculture Inputs Corporation (AIC)	1	1
Agriculture Development Bank (ADBN)	1	SFDPs
Nepal Food Corporation, Branch Office (NFC)	1	-
District Forest Office (DFO)	1	Range posts
District Development Committee (DDC)	1	-
District Cooperative Office (DCO)	1	-

As in the other districts discussed earlier, DADO and DLSO are responsible for improvements in agricultural extension, training and services (transfer of technology), while DIO, AIC and ADBN contribute to agricultural production through improved irrigation facilities, wider supply of seeds and fertilizers and improved access to agricultural credit. The NFC handles procurement of rice and wheat locally for distribution to food deficit areas. The DFO contributes to food security through the protection and management of forest resources while the DDO coordinates district-based government line agencies. The DCO is responsible for registering cooperative societies.



## 5.2 Background of Amahibelaha VDC

### 5.2.1 Location

Amahibelaha VDC is situated 30 km south-west of Inarwa, the district headquarters. All the nine wards of this VDC have access to all-weather motor roads. Bordered by Tangri River in the east, Budi river in the west, Chimdi VDC in the north and Amaduwa in the south, it has about 1 497 ha of agricultural land. Main settlements in the VDC are Belaha, Sitagung, Gurung Tole, Kumale Tole and Kasargaha.

### 5.2.2 Social features

According to available statistics, the population of this VDC was about 4 700 in 1991, with 834 households. The population density per ha of VDC is 2.5 whereas population density per ha of agriculture land is 2.67. Average household size is 5.63 while the average size of landholding per household is 1.79 ha. *Tharus* were the original inhabitants of the area. Other dominant households in the VDC are *Brahmins*, *Baniyas* and *Dalits*, in that order.

### 5.2.3 Economic features

Agriculture is the main source of livelihood of the people of Amahibelaha while rice, wheat and maize are the main cereal crops. Although Amahibelaha is self-sufficient in terms of food production, key informants said only about 60 percent of households have sufficient food all year round. With the establishment of a sugar factory in the neighbouring village, sugar cane cultivation has been increasing. Livestock raising is quite common in the VDC with animals mainly kept for draught power and ploughing purposes. Many poor people go to India in search of seasonal work to earn a living. Finding unskilled labour works is reportedly not a problem in India. Vegetable growing for commercial purposes has been gaining popularity among all categories of farmers due to proximity with Biratnagar and Inarwua markets.

### 5.2.4 Natural resources

In terms of natural resources, Amahibelaha seems relatively poor. Of the VDC's total 1 834 ha , only 20 ha comprises grassland. This is being developed into a community forest by the people of Wards 2, 3 and 4 and has been handed over to the user committee. Responding to the shortage in forest products, a few in the area have already established private plantations while a few are initiating such an undertaking. The effect of a permaculture farm at Amaduha VDC, which was established by a local NGO with the support of the international funding agency, can be clearly seen even though the farm has not been operating recently for some reason.

Like in the rest of east *Terai*, the land frontier of Amahibelaha now seems to have reached its limit. Agriculturally, Amahibelaha seems advanced and habitually makes use of chemical fertilizers and pesticides.

### 5.2.5 VDC resources

The social and natural resources map of the Amahibelaha VDC prepared by local communities is presented in Annex 2. The purpose of the map was to identify the comparative location and importance of different resources within an area. The map provided a framework for discussion over the relative location of resources and for highlighting the issues concerning these resources. The VDC map prepared by the local communities during the PRA exercise presented the following resources in Amahibelaha VDC.

#### ➤ **Infrastructure**

- Schools. The VDC has five government schools located at Wards 9, 2, 6 and 7. There is also one primary private boarding school.
- Drinking water tap. Almost every household has a tubewell drinking water facility.
- Temples. Four temples of god and goddesses are situated in this VDC.
- Irrigation canal: Subsidiary of the Morang-Sunsari Irrigation.

#### ➤ **Institutions:** The following institutions are present in this VDC.

- Community Forestry Users Committee.
- Local Youth Club. These clubs hold activities for socio-economic upliftment and community development.
- Several saving and credit groups formed by Plan International, RDB and District Women Development Office.

### 5.2.6 Development interventions

Institutions for development interventions in the VDC include one health post, the *Chotti* Post Office, one police post, one agricultural farm and one VDC office

## 5.3 Belaha (study village)

### 5.3.1 Location and ethnic composition

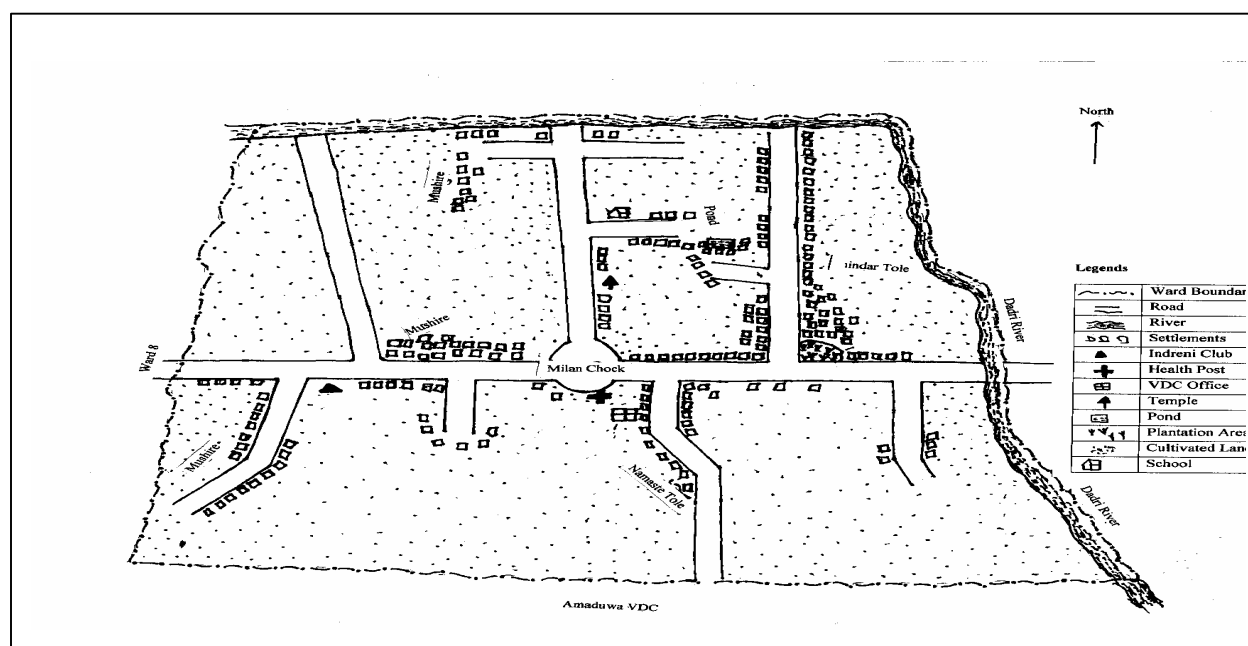
Situated at the centre of Amahibelaha, Belaha Village comprising Ward 1 is formed by five major settlements, namely, Belaha, Mushure, Namaste Tole and Indar Tole. Belaha is bordered by Dandri river in the north and the east, Amaduwa VDC in the south, and Ward 8 of Amahibelaha VDC in the west. As shown below (Table 5.11), 57 percent of the population in Balaha are *Tharu*. After Tharu, disadvantaged groups (DAG) form the majority followed by *Baniya* and *Brahmin*.

**Table 5.11: Ethnic composition of households in Belaha village**

Caste	Household	Percentage
<i>Chaudary</i>	57	47
<i>Dalits</i>	43	43
<i>Baniya/Kayastha</i>	12	12
<i>Brahmin</i>	9	7
Total	121	100

### 5.3.2 Local resources

The village map of Belaha prepared by local communities during the PRA exercise is given in Figure 5.1. As seen in the figure, apart from the agricultural land, the village has other major resources as shown in Table 5.12.



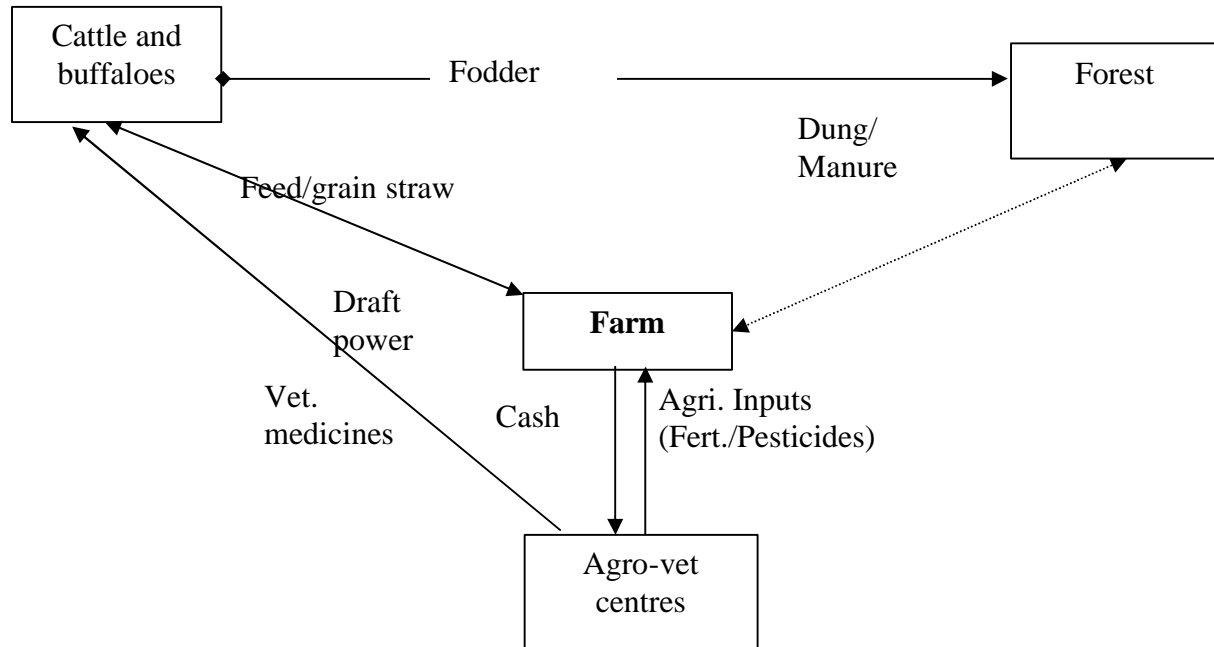
**Figure 5.1: Social and resource map, Belaha**

**Table 5.12: Major resources of Belaha village**

Private Plantation	Along the bank of river Chaura river
Primary school	1
Temple	1
Drinking water system	Almost every households
Settlement roads	
VDC office	1
Health post	1
Indreni Club	1

### 5.3.3 Agriculture system

Figure 5.2 presents farming systems of Amahibelaha VDC, which was prepared based on observations and discussions with key informants. As shown in the figure below, the farming system is relatively independent of forest and public grazing lands. A much larger proportion of livestock fodder in Belaha comes from crop residues.



**Figure 5.2: Farming system in Amahibelaha**

### Cropping pattern

Like Pratappur of Kailali district, Belaha's economy is also dominated by agriculture. Located about 10 km from Biratnagar, one of the biggest industrial cities of Nepal, Belaha Village, represents a VDC that is rapidly moving towards commercialization of agriculture. Farmers usually grow three crops a year in Amahibelaha. In terms of area, rice is the predominant crop in Amahibelaha. The cropping system is rice-based. The popular crop rotations are: rice-rice-wheat, rice-rice-mustard, rice-rice-maize, rice-wheat-fallow and rice-vegetables-vegetables.

The use of chemical fertilizer per hectare of arable land is high compared to the Nepal's average, which is less than 30 kg per ha of arable land (Table 5.13). Due to the operation of a sugar factory in the adjoining village, sugar cane has become a popular cash crop in the area. Most of the big farmers plant sugar cane. Next to sugar cane, growing vegetables for market is common among big, medium and small farmers. Vegetables provide cash income for families of all economic classes and are seen by poorer households as a strategy for survival during food shortage Months.

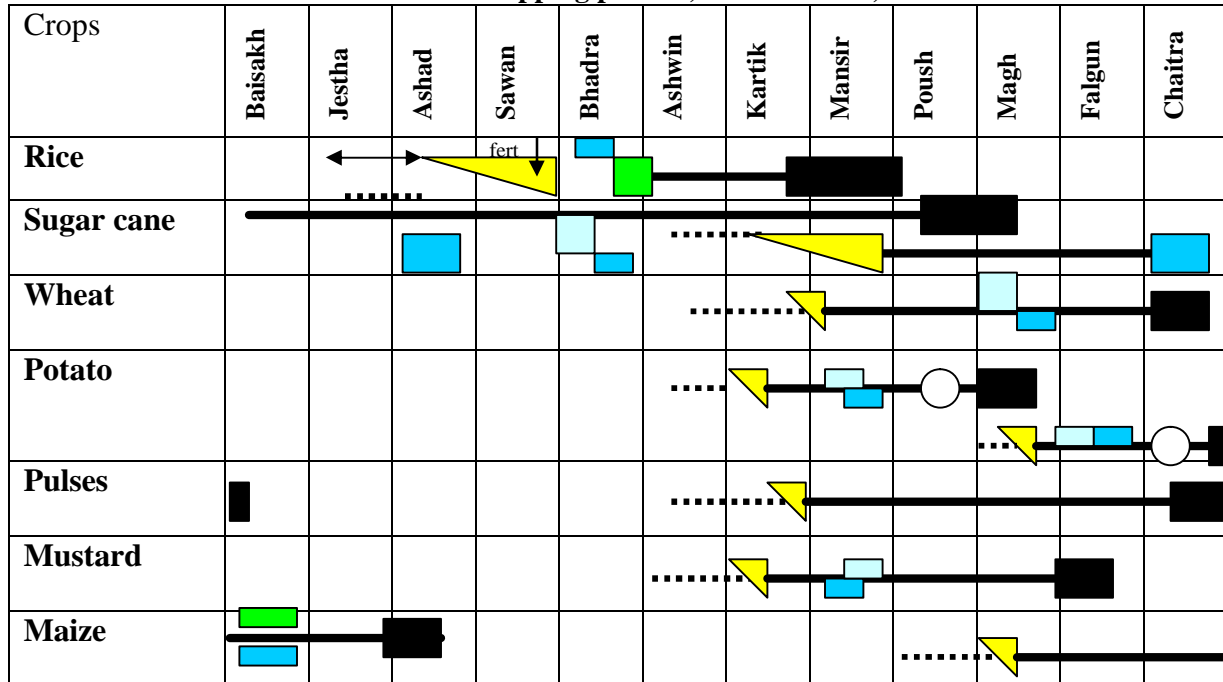
**Table 5.13: Fertilizer use by crops in kg/hectare**

Crops	Nitrogen	Phosphorus	Potassium	Total Nutrients, Kg/ha
Rice	78	23	-	99
Wheat	32	23	-	55
Potato	147	23	-	170
Maize	-	-	-	-
Pulses	-	-	-	-
Sugar cane	55	23	-	78
Mustard	23	-	-	23

Source: Field survey

Amahibelaha VDC is also a pocket area for sugar cane and mustard. As seen in the box above, farmers have not used potassium fertilizers in the last two years because of non-availability after the fertilizer deregulation. Concerned authorities are said to be indifferent to the above situation, not making any serious efforts to promote the balanced use of fertilizers or avail of Muriate or Potash in the market. Table 5.14 presents the monthly cropping calendar.

**Table 5.14: Cropping pattern, Amahibelaha, VDC**



Legends

- Manuring (fertilizers)
- Land Preparation
- Harvesting
- Irrigation
- Weeding
- Soil filling
- Bed preparation
- Planting

## Crop yields

Table 5.15 compares average yields of major cereal crops as reported by key informants during the PRA in the village with national district average figures as reported in the Government statistics published by the Ministry of Agriculture, 1998/99. Figures in the table show that the average yield of all cereal crops nearly equals that of the district average indicated in the Government statistics, except for rice and potato. The average yield of rice was reported to be higher in Amahibelaha than that of the district average. Extensive use of improved varieties, availability of irrigation facilities and the use of chemical fertilizers have contributed to this. Nevertheless, many farmers reported shifting from rice to sugar cane and vegetable cultivation. A guaranteed market for the products together with improved access to seeds, technical support services and fertilizers have prompted farmers to grow these crops.

**Table 5.15: Average yield of crops in Amahibelaha**

<b>Crops</b>	<b>Village average (mt/ ha )</b>	<b>District average (mt/ha), 1998/99</b>
Rice	2.9-4.40	2.73
Wheat	1.40-1.75	1.74
Potato	14.0-21.0	11.00
Maize	1.10-1.50	1.64
Pulses	0.40-0.510	0.40
Sugar cane	22-44	31.70
Mustard	0.50-0.80	0.40

Source: PRA, Amahibelaha, ASD, MOAC, 1999

## Livestock

Cattle and buffaloes are used as draught animals for transport and soil preparation as well as milk production. A much larger proportion of livestock fodder comes from crop residues and the system is relatively independent of forest and public grazing lands. Buffalo keeping is also quite popular and the increased number of private plantations is due to the popularity of buffaloes in the VDC.

### 5.3.4 Economic well-being

This section describes how people of Belaha identify and analyse the different wealth groups in the village and socio-economic stratification of the people in Belaha and provides their definitions and indicators of wealth and well-being. It also discusses the state of food sufficiency by ethnicity. Table 5.16 gives villagers' own definitions and indicators of wealth and well-being.

**Table 5.16: Locals' indicators for wealth and economical status in Belaha Village**

Rank	Criteria	Remark
First	Landholding size	The larger the size of landholding, the richer the household
Second	Nature of job/types of business	Locally employed, outside the VDC, foreign employed
Third	Ownership of rice mill, tractor etc.	Number of family members working and types of employment (i.e. regular income ensured)
Fourth	Food sufficiency within the family	Number of food self-sufficient months
Fifth	Tenancy	Tenants are usually poor. Richer households rent out their land to poorer households

Above Table 5.16 reveals that people of Belaha VDC measure economic well-being in terms of land size followed by ownership of rice mill or tractor, type of house owned, nature of job or business, etc. Criteria such as tenancy and food sufficiency were also considered but given less importance. As size of landholding is directly related to tenancy and food sufficiency, this indicator apparently covers other criteria. As noted in Pratappur of Kailali District, *Kamaiyas* (bonded labourers) are non-existent in this VDC, indicating relative well-being of villagers.

Table 5.17 presents the economic classes of Belaha households as categorized by participants following indicators listed in Table 5.16.

**Table 5.17: Economic stratification of people in Belaha Village**

Classification	No	%	Types
Richest	7	6	Land bigger than 5 <i>Bigaha</i> , employment, business, tractor and small industry
Rich	11	9	Landholding 1 to 5 <i>Bigaha</i> , employment and small business
Medium	16	13	Land smaller than 1 <i>Bigaha</i> , employment and small industry, working/having lands in contract ( <i>Adhiya/Batiya</i> )
Poor	21	17	Land smaller than 5 <i>kattha</i> , livelihood earned via skills-oriented employment
Poorest	66	55	Landless, wage labour
<b>Total</b>	<b>121</b>	<b>100</b>	

As seen in Table 5.17, Belaha is highly skewed with respect to economic well-being. Although the village reportedly produces food in sufficient amounts to sell to other villages and feed other parts of the country, only less than one fifth of the total households in Belaha were food self-sufficient and approximately 38 percent (46 households) were tenants. Out of 87 households who were poor, 71 percent

(53) were tenants. Moreover, about 72 percent of households in Belaha Village can be considered poor as they do not have enough food to eat for more than six months. Residents of Belaha define rich, medium and poor households as follows:

- **Rich:** Households with large landholdings where one or more members of the family work outside the VDC and which have attractive salaries or remuneration and their own facilities and equipment (i.e. rice mill and tractor). They provide credit to other households and have tenants.
- **Medium:** Households whose agricultural production provides the family enough to eat for about nine to 12 months, depending on the season. A family is considered middle income if it owns land between 1 to 2 bigha (0.68 ha is equivalent to a bigha). Such families usually have one or two STWs. Members of these households usually work for the government or private sector to support the family (i.e. middle class job) and often cultivate their own land.
- **Poor:** This includes tenants, small farmers and *Dalits*. The average landholding size of poor households is less than 1 bigha. Not only is the size of the land small, but also the quality of the land is poor and usually rainfed. These households are run by daily wage labourers and usually have no food to eat for the evening after eating in the morning for more than six months a year.

Table 5.18 displays the economic stratification of the households by ethnicity or caste as differentiated by the villagers during the PRA. This reveals that *Brahmins* and *Baniyas* populate the rich households while the original inhabitants, the *Tharus*, are proportionately poor. Although there may be other reasons for this, most of the respondents say that *Tharus* are less innovative and not very aggressive in adopting modern technologies.

**Table 5.18: Economic stratification of people in Belaha by ethnic groups**

<i>Econ. Class</i>	<i>Brahmins</i>	<i>Baniyas</i>	<i>Chaudhary/Tharu</i>	<i>Dalits</i>	<i>Total</i>
Richest (HH)	4 (44.5)	2 (16.7)	1 (1.8)	-	7 (5.8)
Rich (HH)	3 (33.3)	5 (41.7)	3 (5.3)	-	11 (9.1)
Medium (HH)	2 (22.2)	4 (33.3)	10 (17.5)	-	16 (13.2)
Poor (HH)		1 (8.3)	7 (12.3)	13 (30.2)	21 (17.3)
Poorest (HH)			36 (63.1)	30 (69.8)	66 (54.6)
HH number	9 (100)	12 (100)	57 (100)	43 (100)	121 (100)

Figures in parenthesis denote percent.

Source: PRA, Belaha.

Table 5.19 below further reveals that in Belaha, only 27 households (22.4 percent) have sufficient food for 12 months or more. The rest need to find other sources of income for survival. About a fifth of households (19 percent) produce enough to eat for 6 to 9 months. Of the total, 57 percent produce food for less than six months. Out of 70 households that produce food for six months or less, 61 percent are *Dalits* (DAG) and 37.1 percent are *Tharus* (*Chaudhary*).



Although the overall food production situation of Amahibelaha is fair, with local farmers producing more grains than is required by residents, more than 70 percent of households does not produce enough food for subsistence throughout the year. During harvest season, many sell what they have produced, but after some months, they would purchase the same grains at much higher prices from the income earned through services, daily wage labour or from employment in India.

**Table 5.19: State of food sufficiency in Belaha**

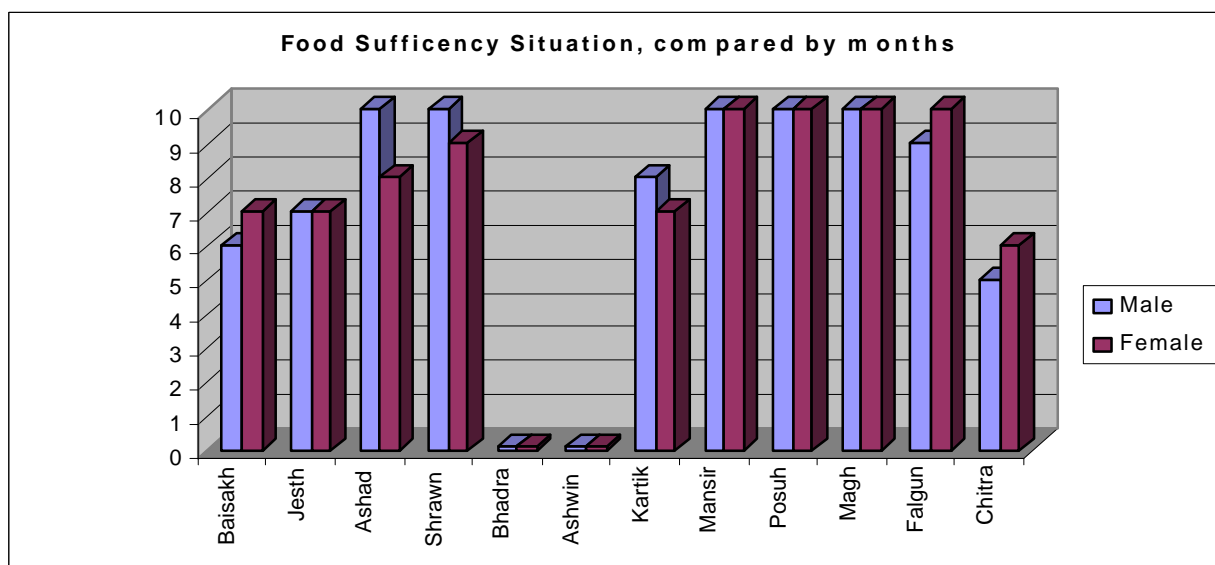
Food sufficiency	Ethnic distribution				Total
	<i>BrahChhetris</i>	<i>Baniyas</i>	<i>Chaudhary</i>	<i>Dalits</i>	
Up to 3 months		-	18 (31.6)	6 (14.0)	24 (19.8)
4-6 months		1 (8.3)	8 (14.0)	37 (86.0)	46 (38.0)
6-9 months	2 (22.2)	3 (25.0)	19 (33.3)	-	24 (19.8)
12 months	3 (33.3)	2 (16.7)	11 (19.3)	-	16 (13.3)
More than 12 months	4 (44.5)	6 (50.0)	1 (1.8)	-	11 (9.1)
Total	9 (100)	12 (100)	57 (100)	43 (100)	121 (100)

Source: PRA, Belaha

Note: Figure in parenthesis indicates the percentage.

### 5.3.5 Seasonal food availability

As shown in Figure 5.3 below, the food availability situation in the village is generally poor for five months, although this ceases to be a problem in the remaining seven months. In describing the magnitude of food shortages, there were similarities in the responses of men and women except for the scale of problem, which seems to be experienced differently by men and women.



**Figure 5.3: Food availability situation in Belaha Village**

### 5.3.6 Income and expenditure

Table 5.20 shows the sources of income of people by economic class. Farming and daily labour comprise the major sources of income for poor households, while for rich households, these consist of farming and business. Middle-income households, meanwhile, obtain their livelihood from sugar cane and vegetable farming. Despite the importance of livestock in farming in terms of providing draught power, its contribution to household income was found to be relatively small.

**Table 5.20: Income sources by economic status in Belaha**

Sources of income	Rich	Medium	Poor
Farming	60	40	30
Semi-skilled work (Carving, building mansions, carpentry, etc.)	-	10	25
Entering India for daily labour employment	-	-	20
Livestock raising	5	10	10
Cottage industry	15	5	-
Services (Public and private sector)	20	20	-
Wage labour	-	-	15
Business and contract		5	-
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

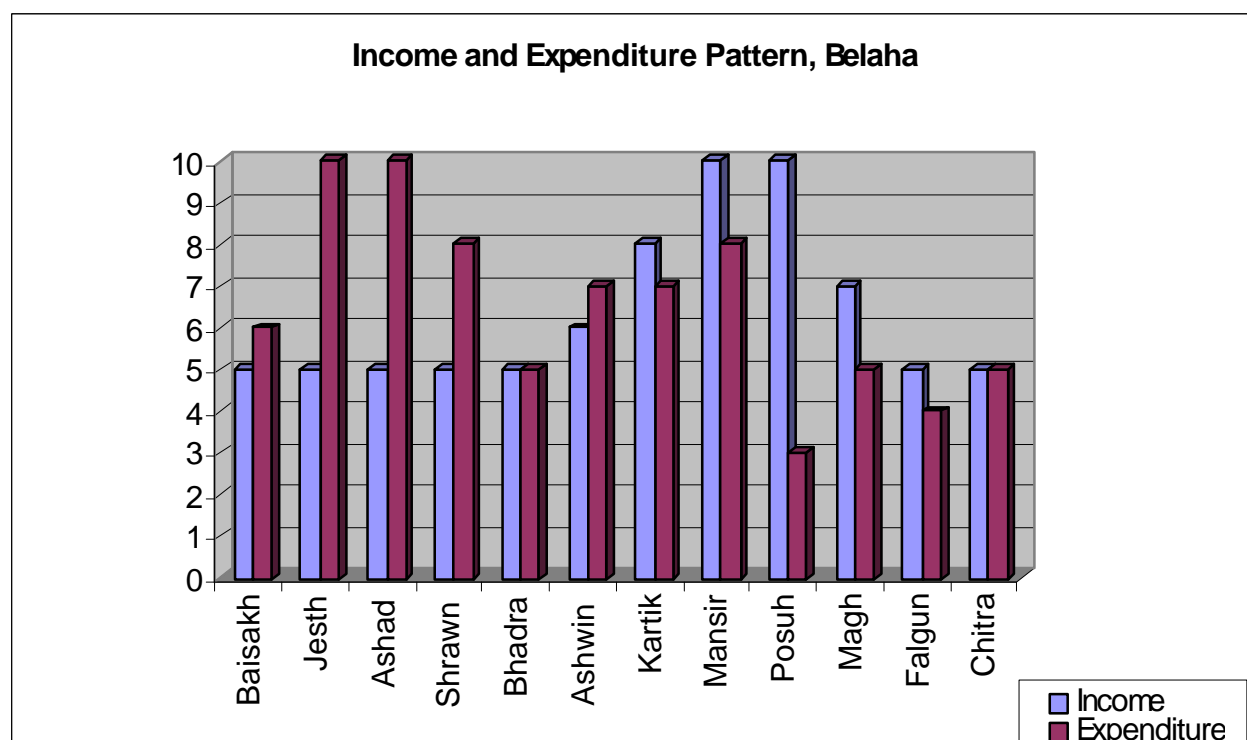
### Expenditures

Most of the respondents from all three economic categories replied that they have been spending mostly on food (i.e. 65 percent of total expenditures). As shown in Table 5.21, the people of Belaha mostly spend their income on food, farming and clothes. Expenditures were relatively negligible in health, festivals, education of children, purchase of ornaments, etc. When asked the reasons behind negligible expenses on the education of children, a few respondents representing rich families said they in fact spend some of their income on sending their children to private schools in Biratnagar and Inaruwa, but the proportion is said to be negligible. Likewise, poor households reported free schooling for children at government schools in the village. Again, the proportion of the budget that goes to buying books and paper is too small to be reported. With the introduction of modern varieties, farmers have begun to use chemical fertilizers. Therefore, the major expenditure of households in farming has been the purchase of fertilizer.

**Table 5.21: Household expenditures by areas/sector**

Sector/Areas	Percent expenditures
Food	65
Farming ( seed, chemical fertilizer, pesticides)	25
Clothing	10
Livestock management	5
Medical treatment	Negligible
Celebrating festivals	Negligible
Education of children	Negligible
Miscellaneous (Purchasing ornaments etc.)	Negligible
<b>Total</b>	<b>100</b>

As expenditure patterns vary by economic level of households, it should be noted that the figures above denote the general expenditure trend.



**Figure 5.4: Seasonal income and expenditure pattern in Belaha Village**

Figure 5.4 shows that expenditures usually exceed income in the months of *Baisakh*, *Jestha*, *Asadh* and *Magh*. Spending is often high in the first three months as these are rice cultivation months. In *Pousha*, income typically exceeds expenditure owing to income received from the sale of rice grains and the relatively small outlay in wheat cultivation.

### 5.3.7 Livelihood strategies

Table 5.22 summarizes livelihood strategies of Belaha residents by type of households (rich, medium or poor) based on the economic classes as categorized by villagers themselves.

**Table 5.22 Livelihood strategies of Belaha**

<b>Rich household</b>	<b>Medium households</b>	<b>Poor households</b>
Business/contracts/ industry	Business/contracts	-
Services	Services	Services/labour work outside the village that is in Biratnagar and in India
Selling cereals/food	Selling cereals	Migrating to neighbouring Indian cities and towns to find job
Selling livestock and livestock products	Selling livestock and livestock products	Selling livestock and livestock products
Earning interest from the cash and cereals lent to others	Borrowing money from both institutional and informal sources (e.g. relatives and private money lenders)	Borrowing money from both institutional and informal sources (e.g. relatives and private money lenders)
Vegetable farming	Vegetable farming	Vegetable farming
-	-	Cutting down food intake (especially women)
-	Mortgaging land	Mortgaging land

The above table shows very little options for the poor. Since borrowing money and finding jobs is not easy in the village, the only option that remains for the poor is to leave the village and work in neighbouring India.

### 5.3.8 Credit

As in the case of the other three study villages, consumption credit was not available through institutional sources in this village despite the need for it. The richer residents have greater access to credit as they are the ones able to provide the collateral needed to borrow money from the bank. Traditional village moneylenders are available to lend money for whatever purpose but interest rates run as high as NRs 5.00 per month for NRs 100.00 or about 60% percent per annum. Bank interest rates range between 14 to 20 percent.

Majority of the PRA participants remarked there was a need to use influence to obtain credit from the bank except in the case of sugar cane production where loans can easily be availed upon presentation of guarantee of sugar cane purchase by the sugar-cane factory. Still, people need to visit the factory and the bank a number of times. Sugar cane production credit can hardly be used for other purposes due to close monitoring and supervision by the factory, which supplies the seeds and inputs.

In the same way, the RDB was willing to finance the production of vegetable crops through women's groups. However, female villagers found this problematic as the bank required weekly repayment of loans. Respondents, particularly the very poor, said that if consumption loans were made available, they would not be exploited by village moneylenders, which reportedly charge exceedingly high interest rates. This reveals that the richer the village becomes, the greater would be the exploitation of the poor.

### 5.3.9 Gender considerations

This section explores the following gender issues in the context of household food distribution, daily activity schedules, division of labour, workload, mobility and decision-making.

#### **Daily food calendar and food distribution**

As stated earlier, household food scarcity affects all members of the households but the effect would be different for different people based on sex, age and economic status. Most of the respondents and key informants stated that it is the women in the family who tend to be affected the most by food shortages. This is because the men usually go to the fields early while women either bring their food to the fields or prioritize serving them when they return home. As women eat last in the family, they are likely to be affected if a guest or a relative arrives at the time of eating. By culture, the women are not supposed to eat before a guest or relative while the men usually eat with the guest.

The normal diet of people in Belaha consists of *Dal Bhat* (rice with pulses and vegetables) eaten twice a day with one snack in between. A wide range of vegetables can be found in the village. While rich people eat plenty of vegetables, the poor usually do not eat vegetables except those grown in the kitchen garden, if any. As in other villages, participants said there is no special diet given to pregnant and lactating women. Although many know about the specific dietary needs of women during these vulnerable stages, the study reveals that many of the female villagers are not conscious about nutrition. Likewise, men do not care to provide nutritious food to women in these stages. Clearly, the importance of special diets for women during these stages is yet to be appreciated in the community.

As shown in Table 5.23, slight differences were noted regarding daily food intake of rich, medium and poor households. Rich and medium households eat rice twice a day almost regularly while poor households consume rice and bread almost equally. Farming activities usually start in the morning and after snacks in the afternoon. People eat a light breakfast, usually at about 7 to 8 a.m., when they have heavy work pressures or are working in the farm. However, the amount of food consumed varies according to the economic class of the household.

**Table 5.23: Daily food schedule**

<b>Econ. Class</b>	<b>Morning (7 to 8 a.m.)</b>	<b>Day (12 a.m. to 1 p.m.)</b>	<b>Evening (8 to 9 p.m.)</b>
Rich	Bread or Beaten rice Curd Vegetables	Rice Pulses Vegetables Pickles	Rice Pulses Vegetables (Veg./Non-veg.) Pickles
Medium	Bread or Beaten rice Curd Vegetables	Rice Pulses Vegetables Pickles	Rice Pulses Vegetables (Veg./Non-veg.)
Poor	Bread or Beaten rice Vegetables, if available	Rice Pulse Vegetables	Rice Pulse Vegetables (Veg./Non-veg.)

**Daily activity schedules**

Figure 5.5 shows two 24-hour activity schedules drawn separately by men and women of Belaha Village during the PRA. Table 5.24 shows that women generally work about 15 hours a day, which is slightly lower than what women in Murma (Mugu), Sokat (Achham) and Kharaula (Kailali) reported. This indicates that the life of women in hills and mountains is more difficult than the life of women in the *Terai*. Although making a general conclusion with a single VDC study in two regions is risky, still, it can perhaps be said that women in Kharaula (western *Terai*) work harder than the women of Belaha (western *Terai*).

**Table 5.24: Gender-differentiated daily activity schedule in Belaha**

<b>Activities</b>	<b>Unit</b>	<b>Involvement of</b>	
		<b>Men</b>	<b>Women</b>
Productive and Reproductive work (Total working hours)	Hours %	13 (54)	15 (63)
Sleep/Rest	Hours %	11 (46)	9 (37)
Reproductive works (Fetching water, cooking, carrying babies, cleaning houses, shed clearing)	Hours %	2 (15)	10 (67)
Productive work (Farming activities)	Hours %	11 (65)	5 (33)

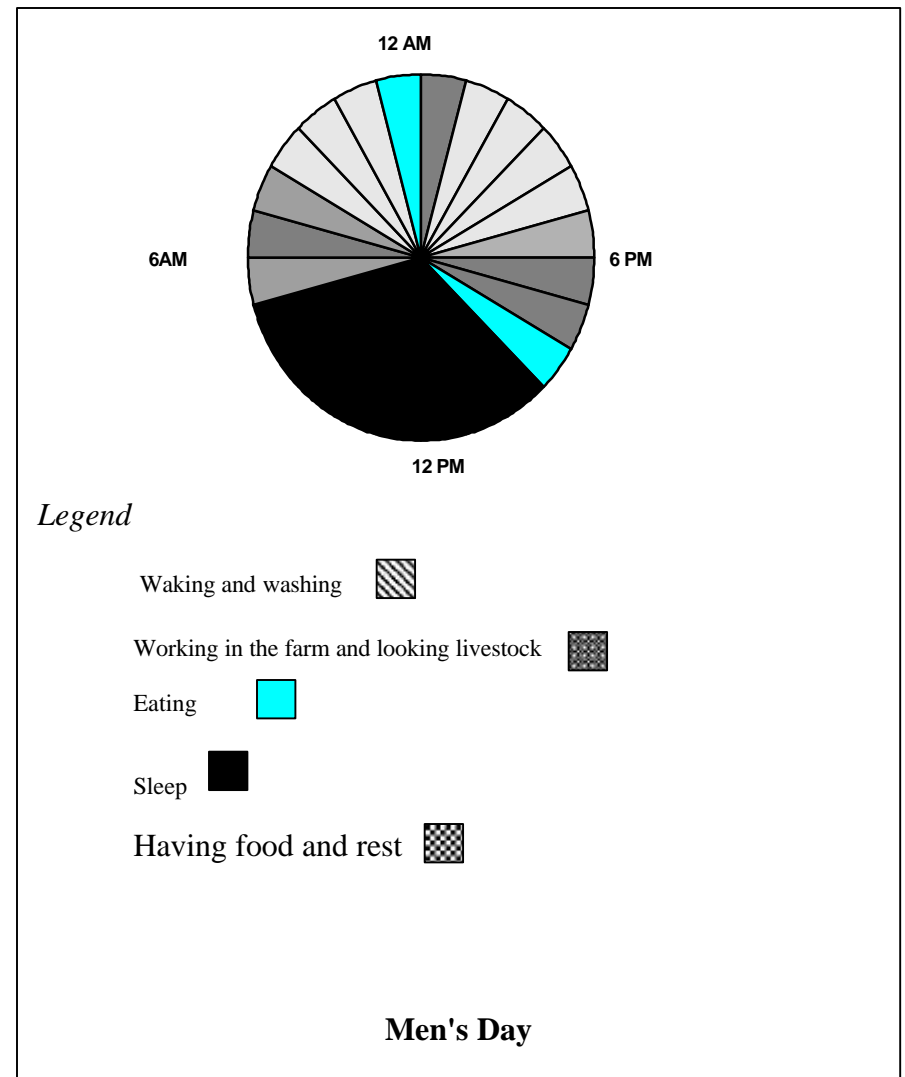
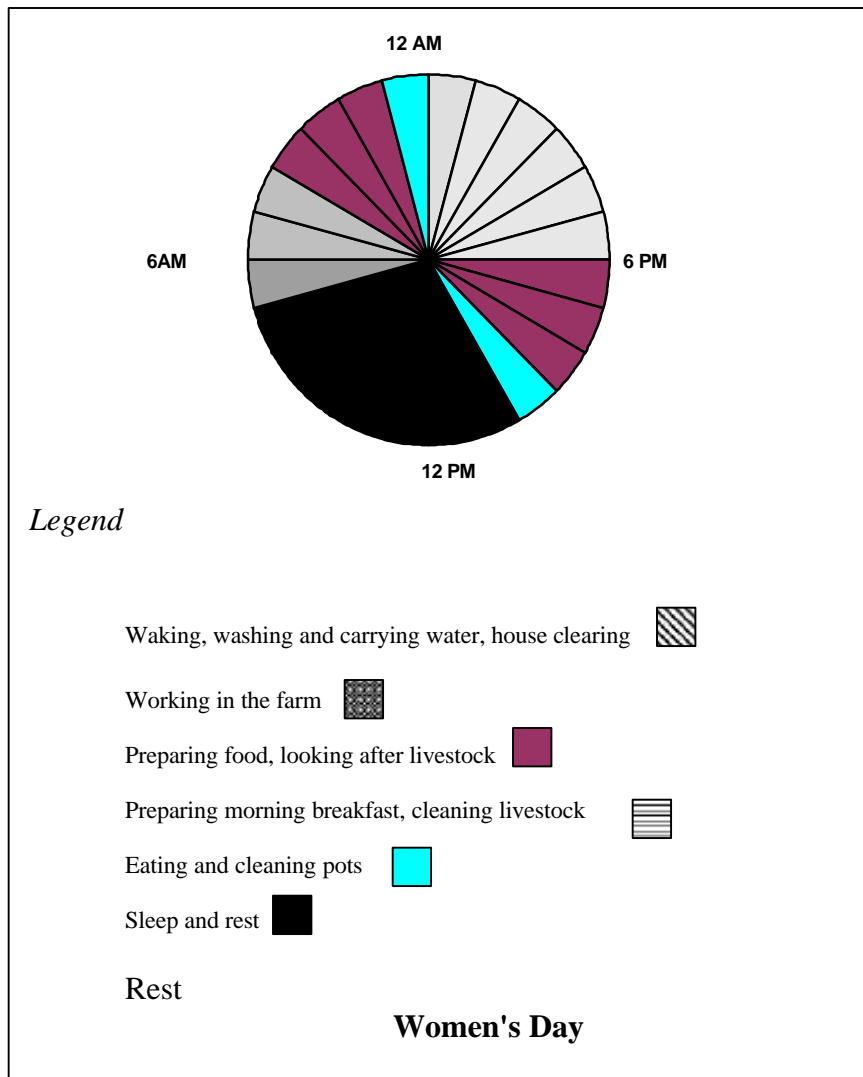


Figure 5.5: 24-hour calendar of women and men in Belaha

As in other study areas, women performed productive and reproductive chores simultaneously. In farming, the women of Belaha work almost five hours a day. Poor and middle class women invariably work in farms but women of richer families would not do so. Because women's reproductive tasks overlapped with productive tasks, dividing their working hours into productive and reproductive activities was not possible.

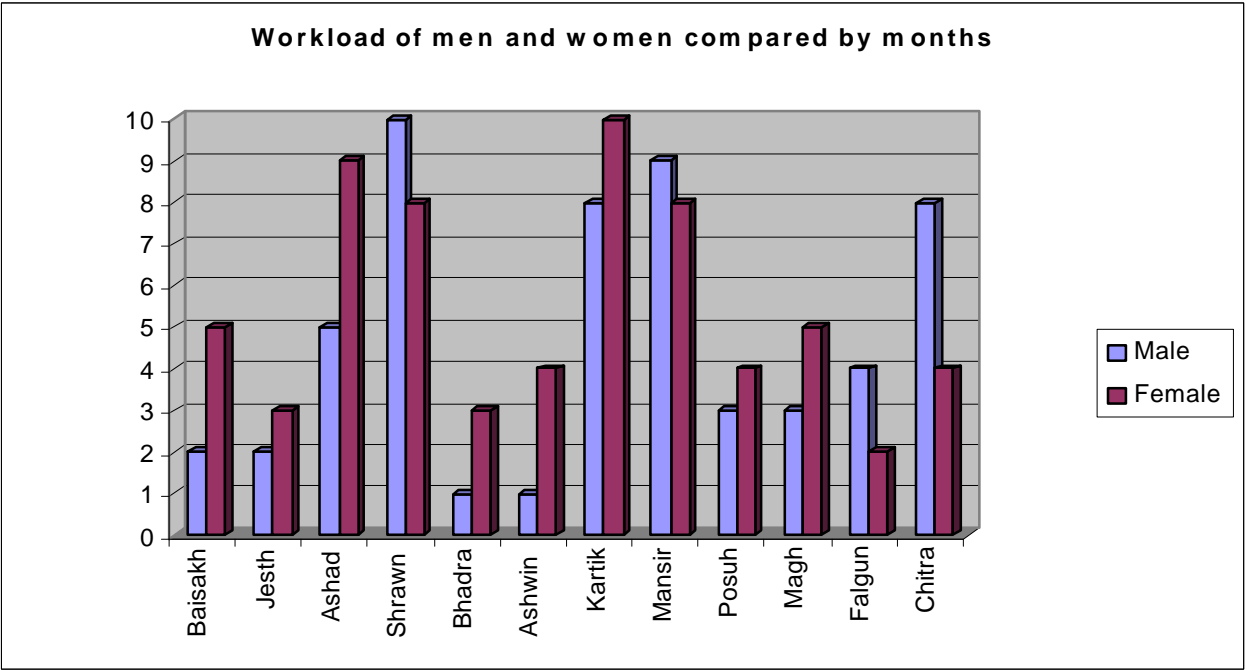
### **Gender-disaggregated division of labour**

Having explored how long women work in a day, participants were asked to prepare a gender-disaggregated household activity schedule (Table 5.25) and to delineate the division of labour in relation to agriculture (Table 5.26). The study reveals that women carry out most of the household chorus such as cleaning, washing, child care and cooking and farming.

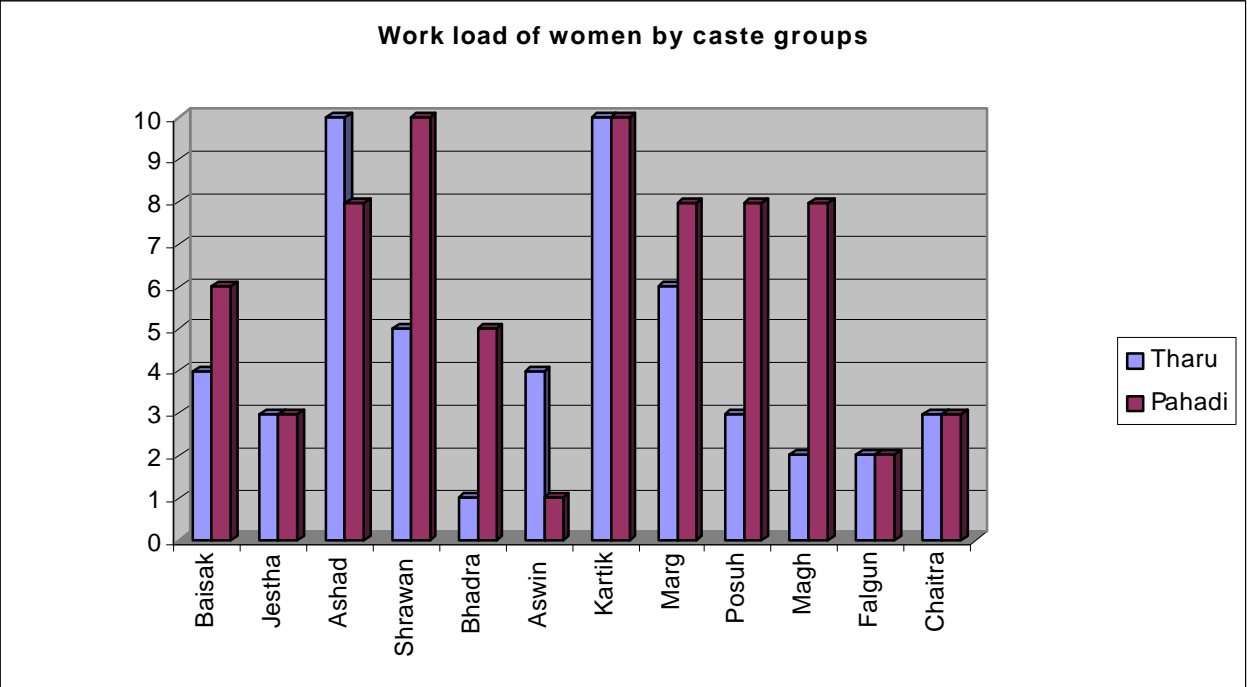
### **Workload**

The workload of the both men and women is high in the months of *Marga (Mangsir)*, *Asadh*, *Shrawan* and *Kartik* (Figure 5.6 and 5.7). *Kartik* and *Marga* are rice harvesting month. *Asadh* and *Shrawan* are planting seasons for rice. Women are often busier than men in the months of *Asadh* and *Kartik* as women are usually engaged in transplanting rice in *Asadh* and *Shrawan*. Compared to the male villagers, female villagers have longer working hours and perform more chores. As shown in the figure, men's workload is generally high only in the month of *Pousha*, which is the ploughing month for wheat. However, the workload of women is heavier in the remaining 11 months. It should be noted from the tables below that the magnitude of workload of men and women varies by month, the nature of work and the economic status of the household.





**Figure 5.6: Work load of men and women by months**



**Figure 5.7: Workload of women compared by months and caste groups**

**Table 5.25: Gender-disaggregated household chores in Amahibelaha**

Months \ Activity	<i>Baisakh</i>	<i>Jestha</i>	<i>Ashad</i>	<i>Srawan</i>	<i>Bhadra</i>	<i>Ashwin</i>	<i>Kartik</i>	<i>Mansir</i>	<i>Poush</i>	<i>Magh</i>	<i>Falgun</i>	<i>Chaitra</i>
<b>A. Household tasks</b>												
<b>Cooking</b>	●	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	●
<b>Cleaning and washing</b>	●○	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	●○
<b>Fetching Water</b>	●	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	●
<b>Baby Care and health</b>	●▲○	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	○▲●
<b>B. Others</b>												
<b>Working outside village</b>	—————	—————	—————▲						—————	—————	—————	—————

Legends

- ▲ Male
- Female
- Children

**Table 5.26: Gender-disaggregated farming calendar, Belaha**

Months \ Activity	Baisakh	Jestha	Ashad	Srawan	Bhadra	Ashwin	Kartik	Mansir	Poush	Magh	Falgun	Chaitra
<b>A. Crops</b>												
Rice		BP▲←P→▲ P/M	▲●●▲		←W→		▲●←H→▲●					
Sugar cane		M—			I, M—	▲ LP	▲ P	→H→▲●				—M
Wheat						▲ LP	▲▲●●▲	—P—		I— M		—H
Pulses	▲→					▲ LP	▲ P	I, M—				▲●←H
Potato						▲ LP	▲●●▲	—P—	SF			
										H—		
										LP, P	I, MSF	▲●▲ H
Mustard						▲ LP	▲ P			M— I		H—
Maize	I— ▲●●▲ M		▲●●▲ H						▲ LP	▲ P		
<b>B. Cattle Keeping/Carrying fodder</b>												
Grass fodder	←											→
Shed cleaning	←											→
Grazing	←											→
Feeding animals	←											→

Legend

▲	Male	LP	Land preparation	I	Irrigation
●	Female	BP	Seed bed preparation	M	Manuring
○	Children	P	Planting	W	Weeding
		H	Harvesting	SF	Soil filling

## Mobility

With a view to assess resource access by gender, both men and women were asked to sketch their mobility map showing the destination, frequency, purpose and distance of their travels. All participating women showed their mobility to be confined mostly to farms, forest areas, Biratnagar, Inarwua (the district headquarters), Dharan and temples and religious places. Although many women said that they frequently visit the RDB branch office, only a few said that they have been to the ASC and LSC situated in the next Chimdi VDC to obtain advice on farming and treatment of cattle and buffalo. This reflects the little access women have to agricultural extension activities in both the crop and livestock sectors. Table 5.27 and Figure 5.8 describes the place, purpose and frequency of travel of women and men.

**Table 5.27: Details on mobility by gender in Belaha Village**

Place	Men		Women	
	Major Reasons	Frequency	Major Reasons	Frequency
Farm	– To work – Production	Every day	– To working and monitor – To bring food	Every day
Temples	– For worship	Frequently	– For worship	Every day
Rice Mills	– Milling – Maintenance of mill	Frequently	– Milling	Often
Biratnagar/ Inarwua, Dharan	– To sell and buy daily necessities – For medical treatment – To visit offices	2 to 3 times a month	– To sell and buy daily necessities – For medical treatment – To purchase agriculture inputs	Often
Local market (Hatiya)	– To buy and sell daily necessities and produce	Quite often during market day	– To buy and sell daily necessities and produce	Quite often during the market day
School	– To monitor children's education, deposit school fees and attend schools functions	Frequently	– To look after the education of children – To pay school fees	Often
Relatives	– To attend social affairs – Carrying and brining livestock	Twice a year	– To attend social affairs	Rarely
India	– Seasonal employment	Rarely	– To visit relatives	Occasionally

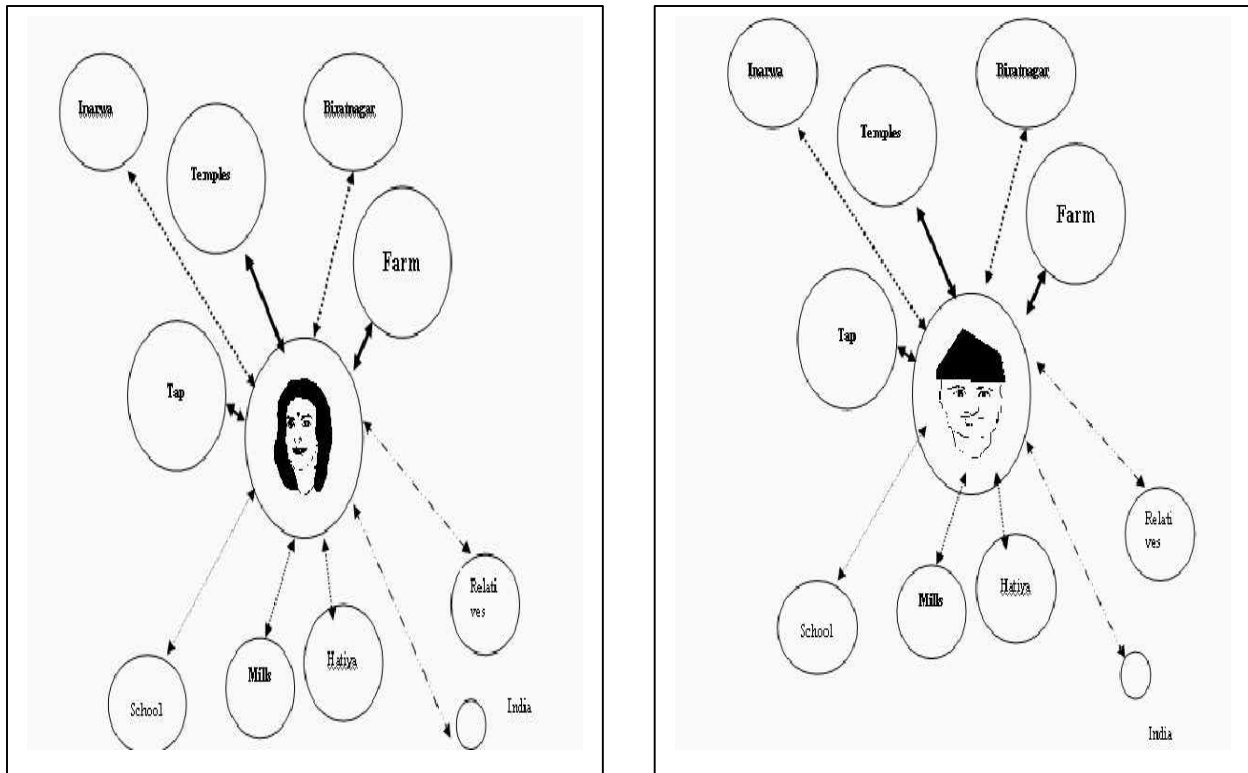


Figure 5.8: Women's and Men's mobility map, Belaha

### Decision-making

Table 5.28 presents female villagers' own description of their status, access to and control over resources as well as their decision-making powers over such issues as the education and medical treatment of children, management of land, farming and family planning. Consistent with findings in the other three study areas, the table below reveals that women usually dominate men on decisions related to food (e.g. what and how to cook). Similarly, men dominated areas related to the education and health of children and financial matters such as the buying and selling of land and the spending of cash income. Interestingly, all PRA participants said women and men jointly make decisions on farm practices, from seed selection, sowing and weeding to harvesting.

In the *Terai* areas, men seem to dominate women in making decisions concerning family planning. *Terai* women hence have relatively less control over their bodies compared to their counterparts in the hill and Mountain regions. It is useful to ask if it is the poor level of awareness of *Terai* women or other cultural or social factors that enable men to dominate women on the issue of giving birth. Due to time limitations and since the study objectives did not permit an exploration of this issue, factors behind the family planning issue not discussed or analysed further.

**Table 5.28: Responses of women on decision-making**

<b>Decision</b>	<b>Men's responses (%)</b>			<b>Women's responses (%)</b>		
<b>Areas</b>	<b>Men</b>	<b>Female</b>	<b>Both</b>	<b>Female</b>	<b>Men</b>	<b>Both</b>
Education of children	75	-	25	50	35	15
Health of children	75	-	25	60	30	10
Land	75	-	25	5	75	20
Food	-	100	-	90	-	10
Cash/money	75	-	25	40	50	10
Farming activities	-	-	100	-	-	100
Irrigation canal repair /maintenance	100	-	-	5	95	-
Family planning	55	10	35	5	80	15

### 5.3.10 Institutional mapping

Participants sketched out the types of organizations present in the VDC as well as those situated outside the VDC. As stated earlier, the purpose of this exercise is to understand local perceptions on the importance and closeness of the different organizations. The relative importance of the organization or institution can be shown by the size of the circle representing it where the larger is the circle, the more important the organization. The extent to which the different organizations interact with each other is shown by the degree of overlap in the diagram. Again, the greater is the overlap, the greater are the interactions and closeness between the organizations.

Table 5.29 briefly describes the main activities of the organizations and institutions engaged in the development of Amahibelaha VDC of Sunsari District.

**Table 5.29: Institutions operating in Belaha Village**

<b>Name of the organization</b>	<b>Type</b>	<b>Location</b>	<b>Major functions</b>
VDC	LEB/ GO	VDC	Local development/ infrastructure improvement/recommendations
School	Public	VDC	Provide educational opportunities to boys and girls (Formal education)
Plan International	INGO	DHQ	Children-focused development, infrastructure development, community development
Youth clubs	CBO	VDC	Youth activities
Subhealth post	GO	VDC	Primary health treatment
Agriculture Development Bank (ADBN)	Public	District	Provide credit to farmers on individual and group basis for farming, small enterprises and businesses.
Sugar factory	Private	VDC	Sugar production
Rural Development Bank (RDB)	Public	District	Provide credit to marginal and landless farmers (women) to operate small-scale businesses and enterprises such as buffalo keeping, village tea shops, village groceries, kitchen gardening on group basis.
Agriculture Subcentre (ASSC)	GO	Chimdi VDC	Agricultural technologies (cereals, cash crops, fisheries and horticulture) transfer (training and demonstration)
Livestock Services Subcentre (LSSC)	GO	Chimdi VDC	Livestock development and animal treatment services
Cooperative Society	Public	Chimdi VDC	Distribution of seeds and fertilizers
Post office	GO	VDC	Postal service
Women Development Office (WDO)	GO	DHQ	Women's empowerment, training, saving and credit, etc.
Family planning	GO	VDC	Family planning advice, clinical services and facilitating temporary and permanent measures such as vasectomy and leproscopy.

As shown in the above table, Amahibelaha like Pratappur also hosts multiple credit organizations namely, the ADBN, RDB, Cooperative Society and the Women Development Office (on a limited scale).

Figure 5.9 shows the Venn diagram drawn by villagers. For both men and women, PLAN International was the second most important organization after the school system even if it was not present in the VDC. For this, it can be concluded that people look to quality of services rather than physical presence. Furthermore, the PRA showed poor contacts or relationships of villagers with ASSC and LSSC despite the high importance given to these organizations (i.e. ranked third in terms

importance). As seen in the Figure, circles of these organizations are placed farther from the village and local communities. While economic activities of the VDC appear to be changing from subsistence to commercial agriculture, the linkages and contact with the ASSC and LSSC remain poor.

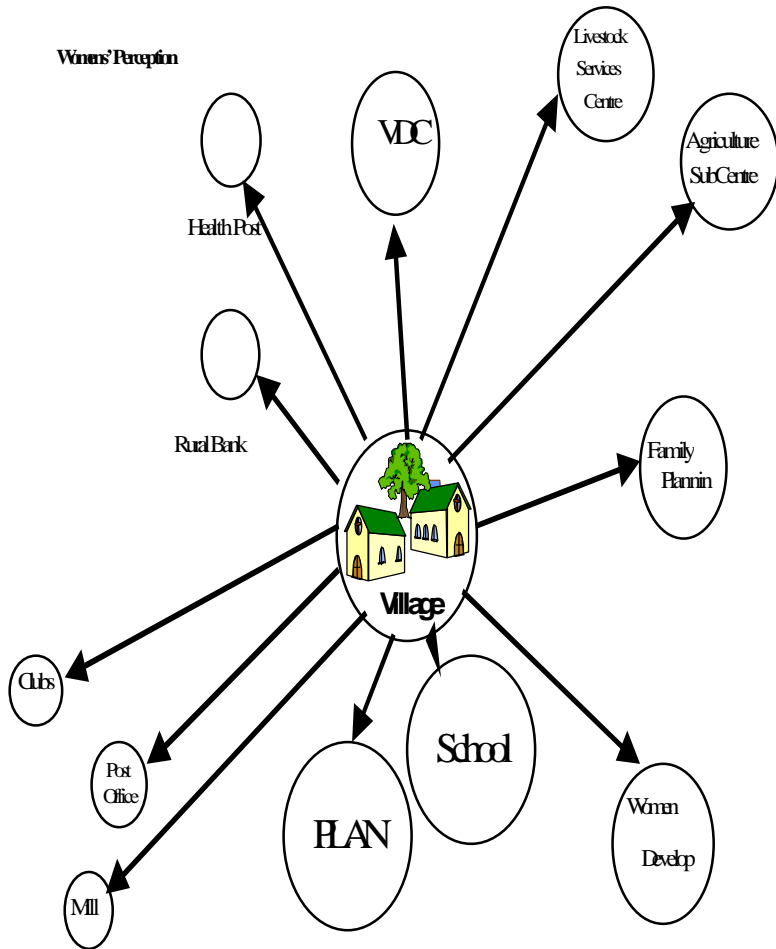
Table 5.30 summarizes how villagers ranked the different institutions in terms of importance and relationships.

**Table 5.30: Villagers' perceptions on the importance of and their relationship with different institutions in Belaha**

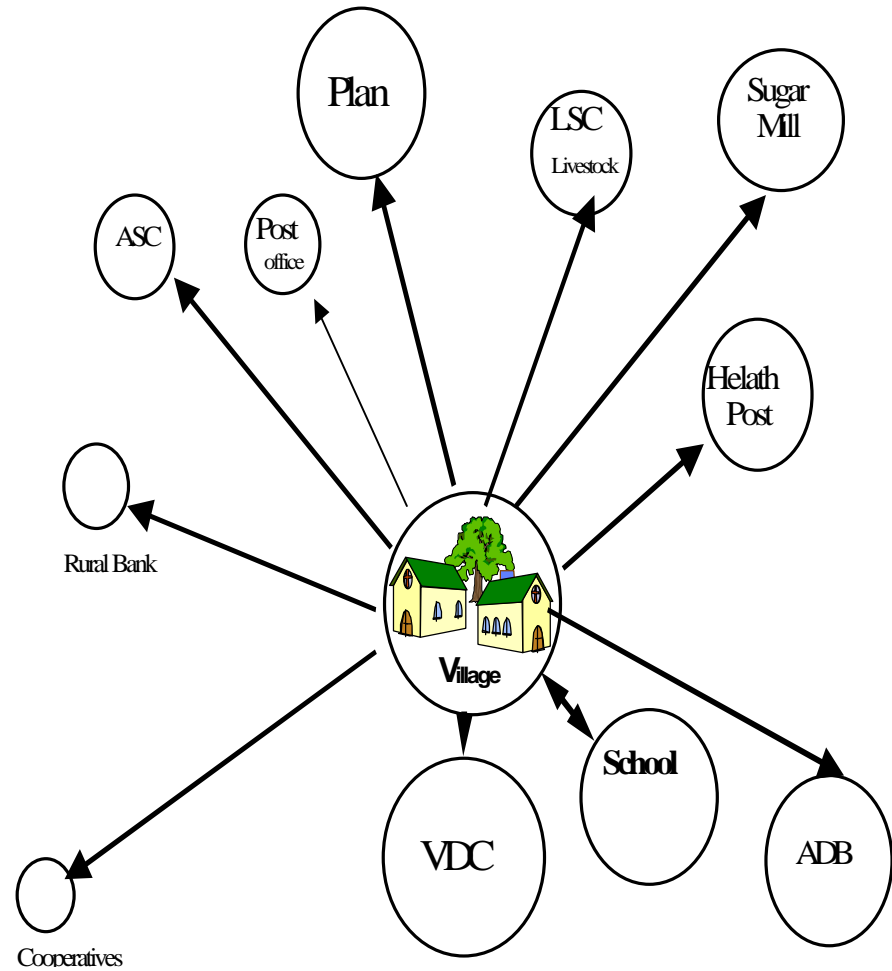
Institutions	Women's perceptions		Men's perceptions	
	Importance	Relationship	Importance	Relationship
School	First	Nearest	Second	Very near
PLAN	First	Very near	Third	Far
Women Development	Second	Far	-	-
Family Planning	Third	Very near	-	-
VDC	Third	Near	First	Nearest
Livestock Service Centre (LSC)	Third	Very far	Sixth	Very far
Agriculture Service Centre (ASC)	Third	Very far	Seven	Very far
Rural Development Bank (RDB)	Fourth	Near	Eighth	Very far
Health post	Fourth	Near	Fifth	Near
Post office	Fifth	Far	Ninth	Far
Clubs	Sixth	Very far	-	-
Sugar mill	Seventh	Farthest	Fourth	Far
Cooperatives	-	-	Tenth	Farthest
Agriculture Development Bank (ADB)			Third	Far



**Women's Perception**



**Men's Perception**



**Figure 5.9: Gender perceptions of institutional networks, Belaha**

### 5.3.11 Changes as perceived by villagers

In order to know the pace of development in the village, the villagers were asked what changes they have seen in the village over the last ten years and what caused these changes. Table 5.31 presents changes in the villages as noted by the villagers during the PRA.

**Table 5.31: Overview of changes as perceived by people in Belaha Village**

<b>Perceived change</b>	<b>Reasons for change</b>
Increased awareness on education	<ul style="list-style-type: none"> <li>– Adult education programme conducted by PLAN</li> <li>– PLAN’s support to improve the physical facilities at the village school.</li> </ul>
Opening of private boarding school in the VDC	<ul style="list-style-type: none"> <li>– Increased awareness on education</li> <li>– Nationwide popularity of private schools partly due to the declining quality of education at government. schools and partly due to the operation of private schools as a business</li> </ul>
Improvement of road and transport facilities	<ul style="list-style-type: none"> <li>– Initiatives and support of the VDC</li> <li>– Establishment of the Eastern Region Sugar Mill at a neighbouring VDC (Chimdi)</li> </ul>
Improvement of drinking water facilities	<ul style="list-style-type: none"> <li>– Support of PLAN and UNICEF for the construction of drinking water taps</li> </ul>
Improvement of irrigation facilities	<ul style="list-style-type: none"> <li>– District Irrigation Office support for the construction of a new irrigation canal at the lower belt of the VDC</li> </ul>
Expanded awareness on health related issues and increase in problems	<ul style="list-style-type: none"> <li>– Establishment of a family planning clinic and a subhealth post</li> <li>– Free medicines made available by PLAN</li> </ul>
Wider market access	<ul style="list-style-type: none"> <li>– Improvement of transport facilities</li> <li>– Weekly market regularly organized</li> </ul>
Initiation of sugar cane farming	<ul style="list-style-type: none"> <li>– Establishment of the Eastern Region Sugar Mill at a neighbouring VDC (Chimdi)</li> <li>– Easy credit made available by the Bank upon guarantee of the sugar factory</li> <li>– Availability of technical services and improved seeds from the factory</li> </ul>
Increase in cropping intensity and productivity of crops	<ul style="list-style-type: none"> <li>– Improved irrigation facilities</li> <li>– Increased use of chemical fertilizers</li> <li>– Seeds and fertilizers made available by the Cooperative Society of Chimdi</li> </ul>
Initiation of small-scale industries/business	<ul style="list-style-type: none"> <li>– Credit without mortgage made available by the Rural Development Bank</li> </ul>
Increase of theft in VDC	<ul style="list-style-type: none"> <li>– Removal of police post from the VDC</li> <li>– Increased poverty, unemployment, starvation and illiteracy</li> </ul>

### 5.3.12 Problems and their prioritization

Table 5.32 lists the problems mentioned by women and men and their corresponding priorities in Belaha. This table reveals that there exist little similarities between problems faced by men and women in the village with respect to agricultural problem. While the lack of irrigation was the most pressing problem for men, this was not a priority issue for women who reported damages of crops by the flood as the first priority. They hence sought immediate actions and programmes to control flooding in the village. The male villagers argued, however, that floods are not regular events and occur only occasionally. This indicates that women are more concerned with the present and fearful of food loss in the event of a flood, while men are more concerned with the future. Women were not sure how production could be increased with the enhancement of irrigation facilities, but had very tangible experiences of production losses due to the natural calamity.

While many male villagers claim that they know more about the crop production than the frontline extension workers (e.g. especially the JT/JTA), many women participants cited the lack of technical knowledge and skills to increase agriculture production as the second most pressing problem. This is an indication of their weak access to agricultural extension services.

The issues raised by men mostly deal with difficulties encountered in commercializing agriculture such as high fertilizer prices and lack of irrigation, chemical fertilizers, improved seeds and credit. Men said it would be sufficient for them if ASC directed their efforts to making credit, seeds and fertilizer more widely available. They believe technical extension workers are not competent enough to teach them and do not exert enough effort to help provide seeds and fertilizers in a timely manner.

**Table 5.32: Agriculture-related problems and their prioritization**

Men's Priorities	Problems	Women's Priorities
First	Lack of irrigation	-
Second	Lack of chemical fertilizer (also, high cost)	Sixth
Third	Lack of improved seeds	Fourth
Fourth	Lack of credit (also, long process involved and time consuming)	Third
Fourth	Lack of market and road facilities	Eighth
Sixth	Degradation of soil fertility due to heavy use of chemical fertilizers and unbalanced use of nutrients	-
-	Crop damage caused by floods	First
-	Lack of skills and technical knowledge	Second
-	Lack of medicines for cattle	Fifth
-	Lack of modern agricultural inputs	Eighth
-	Lack of pesticides and herbicides	Sixth
-	Lack of improved breeds of cattle	Tenth

### 5.3.13 Key findings and conclusions

This section presents the main findings and conclusions from the PRA conducted in Amahibelaha VDC of Sunsari District.

Despite increased agricultural productivity owing to increased irrigation facilities and widening use of improved seeds and fertilizers, the economic status of the people in Amahibelaha has not improved significantly. People of Belahi Village express their mounting dissatisfaction over the current pace of development in the *Terai*, the lack of irrigation facilities, which have not been developed according to its potential, and the shortage and corresponding high prices of fertilizers during peak agricultural seasons. Green revolution technologies have yet to show significant impact on the region. On the other hand, the village seems to be in transition to commercial agriculture.

As majority of the households are poor, farm sizes are typically small. The problem has multiplied due to the increased fragmentation of land such that commercialization of agriculture has been difficult. This study also reveals that the Amahibelaha farmers have already begun to experience the problem of declining soil fertility due to a shortage of organic matter and unbalanced uses of chemical fertilizers. Greater market access, however, has enabled people to grow vegetables although its contribution to annual income was miniscule among all three economic categories of households (i.e. rich, medium and poor).

One of the most common complaints raised by majority of farmers involved the quality of the present extension service provided by government. Many male farmers reported that technical extension workers have nothing to teach to them while women farmers complain about their deficient technical knowledge and skills. Moreover, although Amahibelaha includes pockets of land planted solely to sugar cane, farmers reported no substantial support from DADO. Majority of the farmers instead credited the Eastern Sugar Factory. No clear linkages could be identified between the sugar factory and DADO.

Another very common complaint noted during the study was the shortage of fertilizers during the peak agricultural season. Although farmers have raised the issue of unavailability of potassium since the last two years, none raised the issue of low quality fertilizers entering Nepal via unauthorized cross-border movements.

As in Pratappur district, none of the Amahibelaha farmers reported traveling to India to obtain quality seeds even though shortage of improved seeds was recognized as a problem. Many farmers criticize the failure of Nepalese agricultural research to produce hybrids seeds, particularly maize seeds. In contrast, neighbouring India has reportedly achieved significant breakthrough at producing such inputs for commercial scale.

While men dominated women with regard to decisions on important issues relating to land use, spending of cash income and family planning, joint decisions were made on matters related to farming such as the selection of seeds, planting date, harvest time and use of chemical fertilizers and seeds. However, the study could not trace significant participation of women in activities carried out by Chimdi

junior technicians and technical assistants (JTs and JTAs) except the participation of one or two women farmers at field level training activities and regional training at Jhumka Regional Agricultural Training Centre (RATC). The daily workload of women was found to be high, but lighter compared to the burden of women in the other study locations (i.e. Pratappur, Rara and Sokat).

## **6. DISTRICT LEVEL INSTITUTIONS AND THEIR FUNCTIONING**

### **6.1 Introduction**

As stated earlier in Chapters 2 to 5, the Nepalese Government has operated different agricultural related institutions in all the four study districts to help farmers improve farm productivity keeping in mind the twin broad objectives of achieving food security and alleviating poverty from the country. Some of these institutions are responsible for technology dissemination while others have been charged with supplying agricultural inputs such as seeds and fertilizers, credit and water. Apart from these organizations, the Government has also operated institutions like the NFC, which procures foodgrains from districts benefiting from a production surplus such as Kailali and Sunsari, then stores, transports and sells these to remote mountain and hill districts suffering from food deficit such as Achham and Mugu. NFC sales are made at reduced price with a government subsidy on transport cost.

Although most of the district level organizations operate under the direct command and supervision of their respective line ministries, the decentralization plan of the Nepalese Government has put these organizations under the coordination of the District Development Committee (DDC). This chapter first introduces these organizations briefly and proceeds to describe their programmes and functioning as well as the perceptions about the current situation of food security and related programmes in the district. The last part reflects responses of the participants during the district interaction workshops and regional workshop held after carrying out the PRA in selected VDCs of the study districts. After PRA at Pratappur of Kailali, a half-day regional workshop was held at Nepalgunj of Banke district where most of the regional offices were situated.

### **6.2 Institutions for technology dissemination**

The District Agriculture Development Office (DADO) and the District Livestock Services Office (DLSO) are two major institutions operating in the district under the Ministry of Agriculture and Cooperatives (MOAC). Both organizations have been implementing various extension activities in their respective sectors in order to disseminate technologies generated at the various research centres of the Nepal Agricultural Research Council (NARC). As both these offices are established in all 75 districts of the country, all four study districts have their own DADO and DLSO.

#### **6.2.1 District Agriculture Development Office**

Working directly under the control of the MOAC through the Regional Directorate of Agriculture (RDA) and Department of Agriculture (DOA), DADOs are responsible for extension services related to the crop, horticulture and fisheries sector. Staffing pattern in the district follows the physiographic location of the district, agricultural development potential, and operation of externally funded projects. Of the four study districts, two *Terai* districts, Kailali and Sunsari were supported by the World Bank funded Agricultural Research and Extension Project. Mugu and Achham had no foreign-aided projects.

Organizationally, DADOs are monitored and supervised by the corresponding Regional Directorate of Agriculture which, in turn, works under the control of the Department of Agriculture (DOA). Responsible to the MOAC, the DOA is the chief executive agency for crop, horticulture and fisheries programmes nationwide.

In the field, the DADO is represented by the Agricultural Services Centre (ASC) and the Agricultural Services Subcentre (ASSC). In *Terai* districts, the ASC is supposed to be managed by the officer level staff and ASSCs by senior Junior Technicians. Not only is the ASC a training site for farmers and technicians, it is responsible for monitoring activities under their command areas.

Although DADOs represent the MOAC in the district and have been working under the direct control of this ministry, the decentralization policy of the Government makes them responsible to the District Council and the District Development Committee (DDC). Unless approved by the District Council and the DDC, no agricultural development programmes can be implemented in the district. The local development officer, who is also the Secretary of the DDC, coordinates agricultural development programmes in the district with programmes of other related line agencies.

Because DADOs represent MOAC in the district, the chief of the organization acts as member-secretary to the District Agricultural Development Coordination Committee and the District Agriculture Implementation Committee.

Extension coverage per front line extension workers in the four study districts are presented below in Table 6.1.

**Table 6.1: Extension coverage in the study districts by agricultural sector**

Districts	Number of economically active people in agriculture	Cultivated land (Ha)	Total FLWs <sup>1</sup>	Extension coverage per FLW	
				Number of people	Cultivated area, Ha
Mugu	20 188	11 672	13-20	1 553	898
Achham	107 456	39 342	26- 20	4 298	1 573
Kailali	108 119	69 667	25-18	4 158	2 679
Sunsari	93 454	74 541	26-19	3 594	2 866

<sup>1</sup> FLWs-Frontline Extension Workers refer to JT/JTAs based in the VDC (Working in ASCs or ASSCs)

The level of extension coverage, as measured by the extension agent to farmer ratio, differs widely between countries and across different regions of the world. Nepal's coverage appears nearly double (less intense coverage) to what has been found in most of the countries with public extension systems. The world average is about 1 field extension worker for every 2 000 people who are economically active in agriculture (FAO 1989). Extension coverage in Nepal ranges between 1:3 500 to 1:4 500.

Contrary to low-income countries of Asia, Africa, and Latin America, which have lower ratios or less intensive coverage of 1:1,800 to 1:3,000, industrially developed countries like Europe, North America and Asia have highly intense extension coverage with ratios averaging about 1:400. Obviously, one of the reasons for the lower appreciation for agricultural extension services in Nepal is the poor coverage. Although farmers demand intensive visits, timely support and quality services from the extension workers, it is extremely difficult for frontline technicians to visit the farmers residing in the villages given the difficult terrain. Needless to say, the lack of basic facilities in terms of transportation is a further obstacle to extension workers visiting farmers.

## 6.2.2 District Livestock Services Office

DLSOs are responsible for extension services related to the livestock sector as well as for providing veterinary services to animals, including both preventive and curative treatments. The staffing pattern in the district follows the physiographic location of the district, the livestock development potential and the operation of externally-funded projects.

Organizationally, DLSOs are monitored and supervised by the respective Regional Directorate of Livestock Services, which in turn works under the control of the Department of Livestock Services (DOLS). Falling under the umbrella of the MOAC, the DOLS is the chief executive agency for livestock and veterinary services and provides services and materials in animal health, breed improvement, animal nutrition, extension and training nationwide. The DLSO is represented in the field by the Livestock Services Centre (LSC) and veterinary posts. Hence, the DOLS has offices in all 75 districts operating in parallel with offices of DOA.

Although DLSOs have been working under the direct control of the MOAC, the decentralization policy of the Nepalese Government makes them responsible to the District Council and the DDC. Unless approved by these two institutions, no livestock development programmes can be implemented in the district. The local development officer, who is also the Secretary of the DDC, coordinates agricultural development programmes in the district with programmes of other related line agencies. Extension coverage for livestock sector in the four study districts are presented in Table 6.2. Here, extension coverage by livestock sector is found to be poor in all four districts.

**Table 6.2: Extension coverage by livestock sector**

Districts	Number of economically active people in agriculture	Number of livestock <sup>2</sup>	Total FLWs <sup>1</sup>	Extension coverage per FLW	
				Number of people	Number of livestock
Mugu	20 188	105 073	20	1 009	5 254
Achham	107 456	210 778	20	5 373	10.539
Kailali	108 119	439 266	18	6 006	24 403
Sunsari	93 454	439 266	19	4 918	23 119

<sup>1</sup> FLWs- Frontline Extension Workers refer to JT/JTAs based in the VDC (Working in LSCs or LSSCs) <sup>2</sup> This excludes poultry, ducks etc.

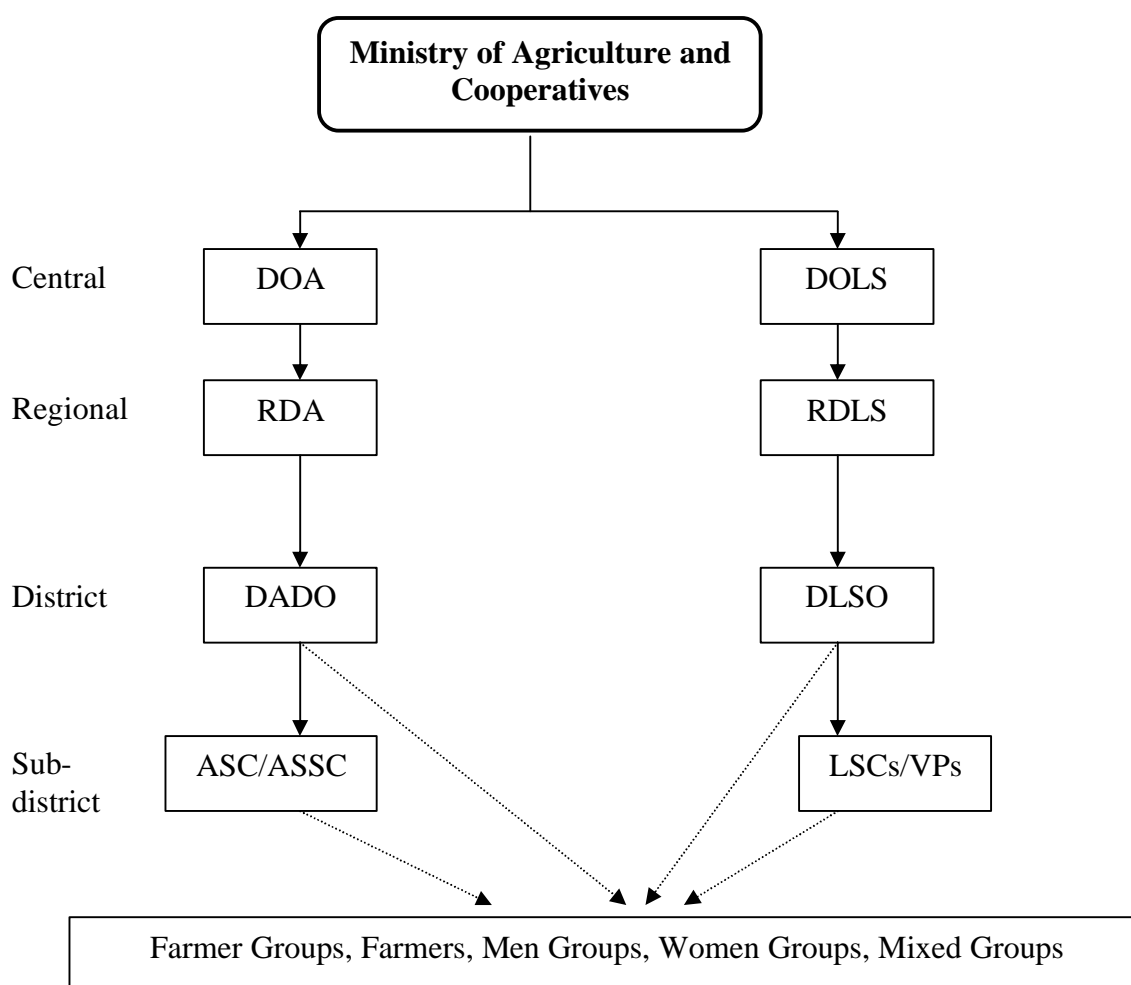


Finally, Table 6.3 summarizes the number of ASCs, ASSCs, LSCs and veterinary posts in each of the four study districts. These are the grassroots organizations through which farmers receive services in their respective areas.

**Table 6.3: Grassroots organizations facilitating agricultural technology dissemination in the study districts**

District	District Office		Service Centre		Subcentre		Total	
	DADO	DLSO	DADO	DLSO	DADO	DLSO	DADO	DLSO
Mugu	1	1	3	5	6	6	10	12
Aachham	1	1	6	6	8	8	15	15
Kailali	1	1	4	7	9	7	14	15
Sunsari	1	1	4	4	11	11	16	16

Figure 6.1 illustrates how the DOA and the DOLS channel their services to farmers through their respective district offices, DADOs and DLSOs.



**Figure 6.1: Parallel extension services under the DOA and DOLS**

The figure above illustrates the important role of grassroots extension agents in the implementation of government policy, on one hand, and achieving the food security goal, on the other, thus contributing to the national goal of poverty alleviation. Unless these agents are well versed with technology dissemination methods and skilled in learning from farmers in order to hand down modern agricultural technologies, achieving the goal of increased agricultural productivity would be remote.

Both departments have been using the group approach as a strategy for dissemination of information. The Nepalese Government has endorsed it as an effective approach to extension and capable of reaching a large number of farmers. However, forming farmers' groups has been a problem and it was reported during the field work that many groups begin to disintegrate or become dysfunctional as soon as they are formed. Of the three extension approaches – individual, group and mass – the group approach is the most cost-effective. Therefore the group approach has dominated Nepal's agricultural extension system, be it for the agriculture or livestock sector.

Apart from these, the extension system in both the departments has currently been making serious efforts to shift from the traditional technology transfer mode of extension to a more participatory bottom-up approach based on systems learning and the facilitative mode through projects such as the Agricultural Research and Extension Project in Kailali and Sunsari districts funded by the World Bank and the Asian Development Bank (ADB)-funded Third Livestock Development Project in Kailali District.

### **6.3 Input Supplying Agencies**

#### **6.3.1 Water**

The importance of water in agriculture needs no explanation. Without water, agriculture cannot succeed. In the water and energy sector, the Ministry of Water Resources (MOWR) together with the Water and Energy Commission (WEC) is responsible for formulating policies, strategies and programmes for the coordinated development of the water sector. Working under the MOWR, the Department of Irrigation (DOI) is the lead agency for irrigation development in the country. Like DOA and DOLS, DOI has a network of five Regional Irrigation Directorates and 75 District Irrigation Offices (DIOs).

DIOs rehabilitate the old irrigation schemes and undertake new irrigation schemes based on the annual budget allocation. They are supposed to work closely with DADOs in order to ensure supply of water in the production pockets in an integrated fashion. Like DADOs, they represent the MOWR in the district but work closely with the DDC in accordance with the decentralization policy of the His Majesty's Government of Nepal (HMG/N). DIOs select the irrigation schemes for feasibility studies, repair and maintenance and construct schemes. This institution carries out programmes endorsed by the District Council and the DDC. The DIO is also a member of the District Agriculture Development Committee constituted under the chairmanship of the Chairman of the DDC.

The Ministry of Local Development (MOLD) also rehabilitates old irrigation schemes or undertakes small-scale irrigation schemes through DDC. This indicates the value local people and farmers place on the development of irrigation infrastructures in the district. The World Bank (through the Nepal

Irrigation Sector Project) and the Asian Development Bank (through Second Irrigation Sector Project) have been assisting irrigation development in all 75 districts of the country for the development of irrigation in the country. Both of these organizations work through the respective DIOs.

The Agricultural Development Bank (ADBN) is another important actor in irrigation development. Since its establishment in 1968, ADBN has been involved in the promotion of irrigation facilities. It provides credit to farmers based on their demand and covers both STW and community surface irrigation schemes. Until recently (before July 2000), the Government used to subsidize the installation of STWs but due to its Second Agriculture Program Loan agreement with the ADB, it has completely withdrawn subsidies on STWs.

### 6.3.2 Agricultural inputs (seeds and fertilizers)

Of the four study districts, Achham, Kailali and Sunsari house offices of the Agricultural Inputs Corporation (AIC), which supplies seeds and fertilizers to farmers. The AIC, a public sector organization, was established in 1966 for the procurement and distribution of fertilizers. Prior to November 1997, AIC had monopoly control over the import and distribution of fertilizer. But after an agreement between HMG/N and the ADB for a 50 million US\$ loan under the Second Agriculture Program Loan, the Nepalese Government liberalized fertilizer trade in November 1997 and required AIC to compete with the private sector. The government had then promised to place the AIC and the private sector on equal footing with respect to the fertilizer trade. As a result of this policy, the AIC closed down its district office in Mugu District, a remote mountain district, due to its high cost of maintenance and low sales (i.e. below 15 mt). With the closure of the AIC district office, the responsibility of fertilizer distribution was shifted to the DADO due to the need to manage fertilizer transport cost subsidies.

As fertilizer trade liberalization entails not only private sector importation and distribution of the fertilizer but also removal of price subsidies on the importation of fertilizer and consequent decontrol of fertilizer wholesale and retail prices, the AIC scrapped its uniform fertilizer pricing policy in the country and replaced this with a differential pricing policy. Meanwhile, the Government removed the fertilizer and seed transport cost subsidy in Achham District due to the construction of the Doti (Silgadhi)-Sanfe Bagar (Achham) Road. However, having found decreased use of both fertilizers and seeds due to high costs caused by subsidy removal and the temporary nature of the Doti-Achham road, the Government reintroduced fertilizer and seed transport cost supports in Achham District in July 2000.

After this change, two of the four study districts (the remote districts of Achham and Mugu) have begun to obtain seeds and fertilizers at reduced rate from the AIC and the DADO, respectively, under the Special Agriculture Production Programme. On the other hand, fertilizer markets of the two *Terai* districts, Kailali and Sunsari, were found flooded with fertilizers from the three sources namely the AIC, private traders and informal or unauthorized cross-border flow of fertilizers. The amount fertilizers sneaked in across the border was reportedly high because of the high price difference between the sale prices of fertilizers in Nepal and India. Not only did this add uncertainty to the importation of fertilizers, but it has further aggravated the problem of ensuring the quality of fertilizers traded in the deregulated market as well.

The Fertilizer (Control) Order promulgated by the Government in March 1999 under the Essential Commodities (Control) Act of 1961 reportedly turned out to be grossly ineffective due to several flaws within the law, apart from the fact that the parent Act was not prepared to handle the prevailing economic system and the more recent market-oriented economic order. As the AIC was an autonomous organization managed under the Corporation Act, it is a fairly independent. Nevertheless, it still functions under the close coordination of the DDC because it is a public sector entity managing fertilizer transport cost subsidies.

### 6.3.3 Credit

Although many institutions exist in the district to provide credit to farmers, the ADBN is the lead banking institution for agricultural credit. It was established in 1968 specifically to cater to the agricultural credit needs of farmers. Since its establishment, it has been helping farmers modernize agriculture through the provision of credit for activities such as the purchase of improved seeds and fertilizers, livestock development and improvement of irrigation facilities. All study districts have ADBN arms at the district headquarters and Small Farmers Development Programmes at several locations in the district. For example, Mugu District has a Sub-branch office of ADB at district headquarters Sri Nagar, Gamgadi VDC and a Small Farmers Development Project office at Chimadungi, Shrikot VDC.

Apart from ADBN, each district has a number of cooperative societies that provide production credit to their members. However, most of these cooperative societies are no longer functioning and farmers need to look for alternative sources of funding. Commercial banks such as Nepal Bank and Rastriya Banijya Bank also provide credit to farmers for the purpose of raising agricultural productivity under their intensive banking programme involving priority sector lending. The Rural Development Bank (RDB) is the most recent banking sector organization to be established that provides credit specifically to women farmers under a group collateral scheme. Both Pratappur and Amahelha VDCs have access to credit services of the RDB.

## 6.4 Public Sector Organizations for the Management of Foodgrains

In Nepal, the organization responsible for public sector foodgrain management is the Nepal Food Corporation (NFC). The NFC was established in 1965 as a Food Management Corporation. It has been restructured several times until it reached the form it now holds today. There have been many changes in its coverage and activities over the last 30 years. Today, the organization is responsible for moving foodgrains from the surplus *Terai* districts to the generally deficit consumption areas of the hill and mountain districts. They achieve this through Nepal's foodgrain marketing system, which comprises both an active and dominant private sector.

Of the four study districts, Kailali and Sunsari are found to be food surplus districts while Mugu and Achham are food deficit districts. NFC has offices in both Mugu and Achham. The Kailali office procures foodgrains, particularly rice from Kailali and Kanchanpur districts, and distributes these at subsidized rates in food deficit hill and mountain districts through the use of the government subsidies.

Sunsari District is covered by the Morang zonal office. The NFC used to intervene in foodgrain markets (predominantly rice) by fixing support prices for foodgrains.

## 6.5 District Workshops

As stated earlier, district workshops were held in the study districts after carrying out the PRA at the VDC level. The purpose of the district workshop was to provide a platform for the presentation of the findings of the study team to the district authorities and thus to validate and triangulate the findings and obtain the reactions of district authorities on the results. Specifically, the district workshops intended to achieve the following goals:

- To present the processed information to the district for presentation and verification;
- To understand the policy linkages (i.e. from the macro to the meso and micro levels) and provide feedback from the micro to the meso and finally to the macro level to aid policy formulation and implementation; and
- To solicit comments and suggestions on the case study findings.

The participants in the district workshops included all relevant district officials working directly or indirectly for poverty alleviation and food security, selected community leaders, and team members. Table 6.4 summarizes the representation of different institutions to the district workshops by district. The list of the representatives of the institutions that participated during the workshop are presented in Appendix 3.

**Table 6.4: Participants at the district workshop, by district**

District	Participants from				Total
	GOs	NGOs/ INGOs	Donor-assisted programmes	Farmers	
Mugu	12	3	2	1	18
Kailali	11	3	2		16
Nepalgunj	17	-	-	-	17
Sunsari	27	4	1		32
Total	67	10	5	1	83

### 6.5.1 Perceptions of the district officials

In all the district workshops, participants had no major comments on the finding from the PRA and basically confirmed what had been presented to them. Nevertheless, many expressed their surprise to find the circle corresponding to their organizations small and far from the communities in the Venn diagram. While some questioned how the Venn diagram was sketched, others raised the issue of reliability. Likewise, a few accepted the reality and began to give their clarifications for the poor performance. The Venn diagram sensitized the district officials and made the interactions lively and participatory. Officials whose organizations were represented by big circles that were close to the VDC

found this to be a source of pride, but for those from institutions with circles that were small and far from the community, the reality became a source of a frustration and proved quite difficult to accept.

As majority of the district participants had no detailed information at the VDC level, they did not comment much. Some participants, however, questioned the selection of the areas under study. They argued that if the research had been carried out in the VDCs under their watch, the corresponding circles would have been bigger and nearer the communities. This reveals that not all VDCs have been effectively serviced by development agencies. Based on the discussions at the district workshops, issues identified at the district level are presented below.

### 6.5.2 Understanding about APP

Although district officials had fair knowledge of the priority inputs of the Agricultural Perspective Plan (i.e., irrigation, fertilizer, electricity and rural infrastructure and technology), they expressed concern over the lack of workable strategies and programmes to combine them into a viable package and they were unaware of how exactly to integrate APP priority inputs so as to achieve the outputs envisaged in the APP. When asked to enumerate the activities or projects in the district, if any, that exemplify the integration of the four priority inputs, none in all the study districts could provide such examples. This reveals that much remains to be done to realize the concept of an integrated pocket approach.

Despite Government's many claims and statements about the implementation of APP since the last three years, most of the district authorities agreed that there exists a wide gap between the policy and implementation. Although the DADOs and DLSOs have identified pocket areas in accordance with the pocket package strategy (PPS) formulated by the MOAC, these were hardly known to other related organizations. DADOs were often seen reporting poor coordination and support of related district line agencies.

### 6.5.3 Programmes and resource allocation

During the workshops, many participants expressed their concern over the MOAC's instruction to allocate 60 percent of total resources to pocket areas as identified under the PPS. They said selected pocket areas hardly exceeded 1000 ha. Asked if the budgetary resources and manpower have increased after the implementation of APP in the study districts, agriculture-related government offices (DADOs, DLSOs and other line agencies) reported there exists no significant differences before and after the APP.

District Participants argued that without sufficient manpower and a restructuring of MOAC and other related line agencies alongside APP programmes, achieving the avowed targets and goals of greater agricultural productivity would be difficult. The MOAC was restructured before the formulation of APP.

Interestingly, while many authorities commented on the seriousness of the district officials over the implementation of APP, the latter questioned the seriousness of senior officials at the regional and central level in implementing the APP apart from the usual speeches and instructions. The issue of the

lack of effective monitoring and evaluation system was repeatedly raised by the participants in all the study districts. In one district, some participants argued that the recent decisions of government to liberalize the fertilizer trade and remove subsidies on fertilizer and STWs were contrary to APP intentions. The question hence arises: Are these policy decisions really anti-APP or are they supportive of the plan? This is a controversy that will not be settled in the near future.

#### 6.5.4 Dependency on the Indian technologies

Having noted the heavy influence of Indian rice varieties in the far western region, questions were thrown to participants about this. Interestingly, although extension workers confirmed this and reported the lack of appropriate varieties in Nepal, the research scientists seemed not to agree. Rather, they argue that the country's research arm has already recommended many appropriate rice varieties for the far western region. They claim it is because of the poor performance of the extension that these varieties have not reached to the farmers. For whatever reason, the district workshop clearly confirmed a weak research-extension linkage.

Meanwhile, although dependency on Indian crop production technologies was found to be high in the western *Terai*, it has been minimal in the eastern *Terai*. Such technologies are hardly used in the hills and mountain regions.

Mugu workshop participants expressed their concern over their access to and the quality of agricultural research being carried out. Wheat varieties developed at *Terai* situation in Bhairahawa Research Farm do not grow well in the mountain environment of Mugu District while the Jumla Agricultural Research Station is too small in terms of resources and number of scientists as well as too far to effectively serve Mugu. Many said that people in that district are so poor that they would not be in a position to store seeds for the next year and would even eat these seeds. Therefore, they needed to buy new ones every year. As improved seeds are not available at the district level, farmers often buy only those available at the local market.

#### 6.5.5 GO-NGO partnership

Although the economic liberalization programme initiated by the Government aims to reduce the role of the government in favour of the private sector and NGOs, district officials – particularly government line agencies and corporations – demand greater resources (i.e. physical, financial and manpower-wise), facilities and training to enhance their roles and responsibilities. Several government line agencies said NGOs only claim to implement demand-led programmes, but provide door-to-door services, offering free inputs and services made available by INGOs and donors. Compared to their higher salaries and a larger staff, NGOs allegedly serve only a smaller number of people.

Some government officials believe private sector players work only for profit and that NGOs simply take advantage of the funds coming from external sources. While acknowledging that they indeed have sufficient resources, NGOs in turn chided government line agencies for their mismanagement of resources and lack of flexibility, transparency and commitment. This indicates that the possibility of

learning from each other is small and that partnerships and collaboration between GOs and NGOs will prove difficult.

However, it is not only policy that demands complementary roles and partnerships between the GOs and NGOs. It should be recognized that all potential partners are actors, each having unique and legitimate contributions to development. As the Ninth Plan clearly states: “Development is possible only with the co-operative efforts of government, private and non-government sectors.” It fails, however, in providing the appropriate environment and institutional set up to foster the partnership between the two sectors. District workshops indicate urgent need for the development of systems and programmes to bring these two sectors together.

## **6.6 Worsening Food Security Situations**

In complaining about the worsening food security situations in Mugu, some participants in the district workshop raised the issue of the removal of the AIC office from the district headquarters while others criticized the policy of the Nepalese Government to distribute food in the district on subsidized prices. Those people who opposed this said food distribution through the NFC has only discouraged the people from producing in greater amounts. As long as the government continues to provide food on subsidized prices, they said people will prefer to wait in line to buy 2 kg rice rather than work and earn the amount sufficient to feed their family for that day, allegedly destroying the incentives to produce. Furthermore, many believe that to create employment, spur development and alleviate poverty, programmes related to infrastructure development, natural resource management, tourism promotion and community development should be aggressively implemented.



## 7. SUMMARY AND CONCLUSIONS

### 7.1 General

This chapter summarizes the key findings of the Participatory Rural Appraisal (PRA) exercises that were carried out in Rara VDC of Mugu District, Sokat VDC of Achham District, Pratappur VDC of Kailali District and Amahibelaha of Sunsari District. The study was undertaken as a part of the study on Policy and Strategy for Poverty Alleviation and Sustainable Household Food Security in Nepal.

The purpose of the PRA was to assess the household food security situations of the people living in different physiographic regions, socio-economic environments and situations (i.e. physical, social and economic) of the country and then examine the major issues behind food insecurity and poverty. These include the policy and institutional constraints at micro level – that is, at the VDC setting – as well as the micro level. The PRA also identified linkages and gaps between (a) the national policies and strategies on poverty alleviation and the improvement or maintenance of household food security (macro level), (b) translation of these policies at the implementation level (meso level), and (c) field responses to these policies (micro level).

District workshops were organized in each of the three district headquarters, namely, Gamgadi of Mugu District, Dhangarhi of Kailali District and Inaruwa of Sunsari District after carrying out research in each of the four sampled VDCs. The aim of the district workshop was not merely to present the findings of PRAs, but also to validate and triangulate the findings with the district authorities, solicit their reactions on key PRA findings and assess the linkages between the macro-meso and micro levels. Specifically, the district workshops intended to:

- Understand the policy linkages and its transfer from macro to meso and micro level and process of feedback from micro to meso and finally to macro level for policy formulation and implementation; and
- Solicit comments and suggestions on the case study findings.

While assessing the macro-meso-micro linkages, the study had also taken into account issues identified in the review of the policy documents, analysis of regional and district level data and information and village level findings of PRA. Special attention was given to developments in after the implementation of the APP.

### 7.2 On study villages

As stated earlier, the study was carried out in one VDC in each of the four districts – Mugu, Achham, Kailali and Sunsari. These were the Rara, Sokat, Pratappur and Amahibelaha VDCs. Table 7.1 below presents key characteristic features of the four study villages.

**Table 7.1: Characteristic features of the four study villages**

Study village	Murma	Sokat	Kharaula	Belaha
<b>Physiographic Region</b>	Mountain	Hill	<i>Terai</i>	<i>Terai</i>
<b>Study District</b>	Mugu	Achham	Kailali	Sunsari
<b>Focused VDC</b>	Rara	Sokat	Pratappur	Amahi Belaha
<b>Altitude of the study VDC</b>	3,698	1,700	250	300
<b>Dominant caste group in descending order (Study VDC)</b>	<i>Chhetris, Dalits, Brahmins</i>	<i>Dalits, Brahmins/ Chhetris</i>	<i>Tharu, Brahmnis, Chhetris</i>	<i>Tharu, Dalits, Chhetris, Brahmins</i>
<b>Dominant farming systems</b>	Livestock-based	Upland-rice based	Rice-based	Rice-based
<b>Nature of farming systems</b>	Subsistence	Subsistence	Shifting towards commercialization	Shifting towards commercialization
<b>Major crops</b>	Millets, Wheat and Barley	Upland rice, Millet, Maize	Rice, Wheat, Mustard, Potato, Sugar cane	Rice, Wheat, Sugar cane, Vegetables
<b>Major livelihood strategy</b>	Men's winter migration to India	Men's migration to India	Farming, Sugar cane cultivation, Business	Farming, sugar cane cultivation and vegetable growing
<b>Average landholding/household (ha)</b>	2.14	0.405	0.95	1.79

### 7.3 Key Findings

#### 7.3.1 Poverty, food security and gender issues

Major findings from the PRA study of the study villages in the four districts are summarized below:

Agriculture dominates the economy in all the study areas. Dependence on farming was particularly high in *Terai*, medium in the hills and quite low in the mountainous areas. The *Terai* represents agriculture that is shifting from subsistence to commercial agriculture. Such a shift was especially rapid in Amahibelaha in the eastern *Terai* compared to Pratappur in the western *Terai*. In Murma and Sokat, agriculture remained at a subsistence level and no sign of modernization could be traced in these villages.

As shown in Table 7.2 below, majority of the people (more than 50 percent) are considered poor in all the study villages.

**Table 7.2: Economic status of the people in the study villages**

(Households in percent)

<b>Economic classification</b>	<b>Murma</b>	<b>Sokat</b>	<b>Kharaula</b>	<b>Belaha</b>
Very rich	-	3.6	2.4	6
Rich	5	14.0	15.2	9
Medium	29	5.7	37.6	13
Poor	15	19.2	12.8	17
Very poor	51	57.5	32.0	55
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Field study.

As *Tharus* and *Dalits* populated in Pratappur and Amahibelaha, Pratappur and Amahibelaha VDCs appeared similar to Murma and Sokat in terms of economic condition. The two *Terai* VDCs (Pratappur and Amahibelaha) were expected to be more progressive and economically better than the VDCs located in the mountains and hills, respectively (Murma and Sokat).

Although all study villages were located on the banks of rivers, the study reveals that water resources are not used except in Belaha. Different study villages had different reasons for this. Rara could not use the available water due largely to topography as the river flows downwards in such a way as to make lifting impossible even with the electricity. Needless to say, the village is not likely to be electrified for many years to come. Pratappur's river is temporary in nature, being nearly dry during the winter season and with channels often broken during the rainy season. Richer people prefer STWs while the poor often use irrigation water (but hardly used during the winter season). Belaha is serviced through the Sunsari-Morang irrigation project. Although the command area of the river flowing by the side of Sokat Village is smaller, people still have not been able to use the water source properly due to a lack of resources. They thus demand such a project from government, but no institutions to reportedly respond to them. Although the VDC's support would be sufficient to initiate construction, the organization already has numerous development projects in the pipeline, which are of greater priority. Sokat villagers are said to be too poor and powerless to influence the VDC and the district authorities.

Although it would be risky to pass judgment in the absence of other relevant data, findings of this study indicate that the indigenous tribes and *Dalits* benefit less from the current economic liberalization programme of the government and from increased development opportunities created in the *Terai*. This claim is further substantiated by the distribution of households by economic class and the state of food sufficiency of different ethnic groups presented in Table 7.3 and 7.4, respectively.

**Table 7.3: Economic stratification by ethnicity of people in the study villages**

(Households in percent)

Ethnic groups/Caste	Murma		Sokat			Kharaula			Belaha		
	DC	Dalits	DC	IT	Dalits	DC	IT	Dalits	DC	IT	Dalits
Very rich	-	-	3.6	-	-	0.8	1.6	-	4.9	0.8	-
Rich	5.0	-	13.5	-	0.5	8.0	7.2	-	6.7	2.5	-
Medium	29.0	-	5.7	-	-	4.8	32.8	-	4.9	8.2	-
Poor	15.0	-	12.9	-	6.2	4.0	8.8	-	0.8	5.9	10.7
Very poor	43.6	7.4	12.4	-	45.2	3.2	28.0	0.8	-	29.8	24.8
<b>Total</b>	<b>92.6</b>	<b>7.4</b>	<b>48.1</b>		<b>51.9</b>	<b>20.8</b>	<b>78.4</b>	<b>0.8</b>	<b>17.3</b>	<b>47.2</b>	<b>35.5</b>

Source: Field Study

Note: DC refers to dominant caste group, which includes, *Brahmins, Chhetris, Baniyas*, etc.; IT to indigenous tribe, which includes *Tharus, Magar, Gurung*, etc.; and *Dalits* to disadvantaged groups, which includes *Kamis, Damais, Sarkis* etc.

**Table 7.4: State of food sufficiency by ethnicity in the four study villages**

(Households in percent)

Food sufficiency	Murma		Sokat		Kharaula			Belaha		
	DC	Dalits	DC	Dalits	DC	IT	Dalits	DC	IT	Dalits
Up to 3 months	43.6	7.4	12.4	45.2	3.2	20.0	0.8	-	14.9	4.9
4 to 6 months	14.5	-	12.9	6.2	4.0	8.0	-	0.8	6.7	30.6
6 to 9 months	29.1	-	5.7	-	4.8	41.7	-	4.1	8.3	-
12 months	5.4	-	13.5	0.5	5.6	7.2	-	4.1	5.8	-
More than 12 months	-	-	3.6	-	3.1	1.6	-	8.2	0.8	-
<b>Total</b>	<b>92.6</b>	<b>7.4</b>	<b>48.1</b>	<b>51.9</b>	<b>20.7</b>	<b>78.5</b>	<b>0.8</b>	<b>17.3</b>	<b>47.2</b>	<b>35.5</b>


Source: Field Study.

The definition of economic well-being given by villagers changes depending on different physiographic regions and socio-economic environments. For villagers, the level of income is not the only measure of economic well-being. As people in Murma and Sokat struggled to feed their families, year-round food sufficiency was cited as the most prominent criteria. In contrast, the size of landholding and nature and type of businesses emerged as the most prominent indicator in *Terai* villages. Because of the poverty in Murma and Sokat, residents of those areas hardly look beyond food sufficiency. In *Terai* VDCs, people have needs beyond food sufficiency as they require cash to support the education of their children, purchase agricultural inputs and hire labour in farming.

The food availability situation in the four study villages is shown below. As indicated by Table 7.5, the situation is somewhat better in the *Terai* VDCs, but not as encouraging as it should have been in view of the resources, development potential and infrastructure development.

**Table 7.5: Food availability situation by month in study villages**

Study Village	<i>Bai</i>	<i>Jest</i>	<i>Asa</i>	<i>Shr</i>	<i>Bha</i>	<i>Ash</i>	<i>Kar</i>	<i>Mar</i>	<i>Pou</i>	<i>Mag</i>	<i>Fal</i>	<i>Cha</i>
Murma												
Sokat												
Kharaula												
Belaha												

 Food sufficient months

The above table reveals that among the study villages, the food availability situation is worst in Sokat followed by Murma, Pratappur and Amahibelaha. The situation is better in Murma since it lies near the district's headquarters and because the village serves as the buffer zone of Rara National Park.

Most households experience food shortages from *Magha* to *Jestha* (5 months) in Murma, *Marga* to *Chaitra* and *Asadh* to *Bhadra* (7 months) in Sokat, *Asadh* to *Ashwin* (4 months) in Pratappur and *Bhadra* to *Ashwin* (2 months) in Amahibelaha. This problem has been particularly acute for poorer households, which sell food crops shortly after harvest in order to pay credit and raise cash.

Until seven years ago, before the construction of Chisapani bridge at Karnali River to connect Bardiya and Kailali district, Pratappur was isolated from the rest of Nepal. The people of Pratappur then had little incentive to produce a greater amount and commercialize agriculture, as they were highly dependent on Indian markets for the sale of agricultural produce. Farmers stated the following four reasons for high production cost in Nepal. First, agricultural research is highly developed in India. Second, agriculture is heavily subsidized in India. Third, the average landholding size per household is larger in India. Also, India has better transport and infrastructure facilities and communication systems. The study reveals how Pratappur agriculture, particularly rice farming, is dependent on agricultural research at Pantnagar. According to locals, Pantnagar's Sarju-52 rice variety dominates rice farming in Pratappur. Even though Nepalese agricultural research scientists claim to have developed alternative rice varieties nearly equivalent to Sarju 52, neither agricultural extension workers nor farmers are aware of these varieties. Nepalese researchers say that the Janaki variety compares well with the Sarju-52 variety, but farmers do not accept this.

The local economy in Murma and Sokat is sustained by the seasonal migration of male members of the family to India for daily unskilled employment even if their earnings are not to survive. Moreover, many say they are often cheated by gang leaders or contractors in India. As they have no work in the village and neighbouring areas, they are forced to find jobs elsewhere, a strategy that also saves food for

the women, children and elderly folk who are unable to go to India. In short, men have to go to India, whether they like it or not as failure to do so equates with hunger. Murma people usually return at the start of summer to work in their farms, but recent years have seen Sokat villagers staying longer in India and traveling there more frequently. This is seen as an indication of increased levels of poverty in Sokat. Richer households with sufficient food to eat typically do not engage in such seasonal migration. If the members of rich families do go to India, it is only for a very short period and just to buy necessities such as clothes and utensils. Due to scarcity of food and the lack of employment opportunities, people of Pratappur and Amahibelaha also travel to neighbouring states of India in search of seasonal daily employment. If poverty seems rampant in Murma and Sokat, it is found to be extensive in Kharaula and Amahibelaha, particularly among indigenous tribes and *Dalits*.

The study reveals that the majority of men, particularly in Sokat VDC of Achham district, prefer not to migrate to India if sufficient, well-paying and regular jobs are available in the village and neighbouring areas of Nepal. Nevertheless, people understand very well that India will not discourage this practice because it also requires a cheap source of labour. Although it appears to be a win-win situation for both the poor people of remote hilly and mountainous districts and India, its implication for the development of Nepal is controversial. If Nepal creates sufficient jobs within the country, workers going to India will benefit significantly as the supply of labour will decrease. This will increase bargaining power of migrants to demand wages commensurate to their work and, the chances of being cheated by gang leaders and contractors will also decrease.

Table 7.6 indicates that when agriculture is subsistence in nature, the workload of women tends to be high as reflected in the case of Murma and Sokat. In general, women there spend 7 to 10 hours a day on reproductive work (i.e. household-related chores and child care) and 5 to 7 hours a day on productive farm work. Dominance of livestock in the farming systems and strong linkages between farm, livestock and forestry has contributed to the increased workload of women. Seasonal out-migration of men in Sokat and Murma has also been a major factor.

**Table 7.6 Daily workload of women and men in the study villages**

(In work hours)

Activities	Murma		Sokat		Kharaula		Belaha	
	Women	Men	Women	Men	Women	Men	Women	Men
Productive work	7	9	9	10	9	NA	5	11
Reproductive work	10	3	8	4	7	NA	10	2
Total	17	12	17	14	16	NA	15	13

### 7.3.2 Development opportunities and interventions

Based on the PRA study of study villages in four districts following development opportunities and intervention areas has been identified.

With the construction of the bridge in Karnali river in 1993 and the completion of the East-West Highway linking Kakadvita of Jhapa district at the eastern border and Mahendranagar of Kanchanpur at western border, indeed, the market integration of West *Terai* with the rest of Nepal has begun to take place. But the study of Pratappur indicates such market integration has been slow and not encouraging. It is thus useful to ask whether institutions operating before and after bridge construction and the completion of the East-West High Way changed their strategies and made positive efforts to integrate West *Terai* with the rest of the country. Moreover, to what extent have the private and public sectors built relationships and supported each other?

Due to the operation of the Basulinge Sugar Mill after the completion of Karnali bridge at Chisapani, residents of Pratappur have begun to plant sugar cane not only because the factory ensures a market for the produce, but also because it provides farmers the needed technical services and production inputs (e.g. seeds, fertilizer and pesticides). Expansion of sugar-cane area cannot be attributed to the support of government organizations offering extension services and research. Multiple institutions operate at the VDC levels although there are more interventions and opportunities at the *Terai* villages (Pratappur and Amahibelaha) in the hill and mountain villages (Sokat and Rara). However, there has been little coordination among these institutions. The operation of multiple credit oriented institutions in Pratappur but with weak interaction and coordination is a striking example.

In all the study villages, farmers hardly appreciate the role and activities of the present grassroots extension organizations in the village (i.e. agricultural and livestock subcentres) as shown by the smaller circles in Venn diagrams. This indicates farmers' dissatisfaction over the quality and quantity of extension services currently provided.

With a view to increase the supply of chemical fertilizers, the Government, in the course of APP implementation, deregulated the fertilizer trade in November 1997. Table 7.7 below shows the effect of the fertilizer trade liberalization programme in the four study villages. Pratappur agriculture seems dependent on the availability of research, particularly rice seeds, at Pantanagar India, while Amahibelaha agriculture seems totally dependent on the initiatives of local farmers. Due to the state of the roads and markets, farmers of all economic classes expanded vegetable areas to raise cash but government support has been minimal. The study could not trace any on-going agricultural researches to solve the food problems in Rara and Sokat of Mugu and Achham District.

Women generally had less contact with the outside world compared to men and their mobility was generally confined within the village and district. Women in Murma were found to be the most cloistered followed by women in Sokat, Pratappur and Amahibelaha. Apparently, the more advanced the infrastructure and transport facilities in the area, the greater tends to be the contact of women outside of their village.

**Table 7.7: Effect of fertilizer trade liberalization at the village level**

	<b>District</b>	<b>Activities after intervention</b>	<b>Response of Government</b>	<b>Farmers' reactions</b>
1.	Mugu	AIC closed its district office to streamline its organizational structure and reduce administrative and overhead expenses.	Government made the DADO responsible for the transport and sale of fertilizer in the district (i.e. role of the district AIC was shifted to DADO).	As farmers in Murma Village hardly used fertilizer, no one raised this issue. However, during the district workshop, the topic was raised as district authorities demanded the re-establishment of AIC.
2.	Achham	–	Government, conforming to the SAPL covenant with the ADB, terminated transport subsidies given in relation to fertilizer use to reduce the number of eligible districts.	As Sokat farmers hardly made use of fertilizer, this issue was not brought up. Removal of transport subsidy meant an increase in the price of fertilizers.
3,	Kailali	AIC reduced fertilizer sale in the district.	–	As private importers did not import fertilizers in Kailali District, farmers continued to experience fertilizer shortages during the peak agricultural season. Low quality Indian fertilizer begun to enter Pratappur village through the Nepalese border. On the other hand, AIC made farmers buy their poor quality lentil seeds in exchange of buying fertilizers from the institution. Farmers thus indirectly subsidized the cost of lentil seeds. Basulinge Sugar mill distributed fertilizers from their store.
4.	Sunsari	Presence of private importers encouraged.	–	As AIC and private importers did not import MOP, farmers experienced shortages in potassium fertilizers but took advantage of the easy availability of different brands of Indian fertilizers in the market. Issues about the quality of these Indian fertilizers emerged. Many farmers complained about the price increase after deregulation and some argued against the current fertilizer policy of the Nepalese Government. Some government officials and leaders, including AIC officials, similarly criticized the prevailing policy of fertilizer liberalization.



Finally, Table 7.8 below summarizes household food insecurity and its causes as well as farmer livelihood strategies based on the four village case studies.

**Table 7.8: Farmers’ problems, their causes and farmer livelihood strategies**

Problem	Causes	Livelihood strategies
Seasonal staple food shortages	<ul style="list-style-type: none"> <li>– Low productivity</li> <li>– Lack of irrigation</li> <li>– Poor services from government agricultural extension offices and weak research activity</li> <li>– Lack of modern agricultural inputs</li> <li>– Declining soil fertility</li> </ul>	<ul style="list-style-type: none"> <li>– Seasonal migration to India (Murma and Sokat) <ul style="list-style-type: none"> <li>– Sell livestock to buy food</li> </ul> </li> <li>– Eat fewer meals per day <ul style="list-style-type: none"> <li>– Travel to neighbouring districts of India in search of wage labour (Kharaula and Belaha)</li> <li>– Sugar cane cultivation (richer households in Kharaula and Belaha)</li> </ul> </li> <li>– Vegetable farming (Belaha)</li> </ul>
Rainfed agriculture	<ul style="list-style-type: none"> <li>– Lack of surface irrigation facilities</li> <li>– Reduction in government subsidies</li> </ul>	<ul style="list-style-type: none"> <li>– Grow rainfed crops such as upland rice, maize and millets (Murma and Sokat)</li> </ul>
Lack of employment or work opportunities	<ul style="list-style-type: none"> <li>– Lack of the government investments and programmes to increase employment opportunities at the village level</li> </ul>	<ul style="list-style-type: none"> <li>– Seasonal migration to India (Murma and Sokat)</li> <li>– Travel to neighbouring districts of India in search of wage labour (Kharaula and Belaha)</li> </ul>
Lack of coordination and linkages among development agencies	<ul style="list-style-type: none"> <li>– Sectoral approach followed by village-based intervening agencies</li> <li>– Multiple agencies with nearly common objectives and programmes operating in the village (Kharaula and Amahibelaha)</li> </ul>	<ul style="list-style-type: none"> <li>– Not applicable</li> </ul>

#### 7.4 Conclusions

As the study moved down from Rara of Mugu District, a mid-western mountain district, to Sokat of Achham District, the following developments were noted:

- Shift from seasonal to regular out-migration of male family members and increase in migrant workers' length of stay abroad;
- Visible decrease in development opportunities;
- Greater food availability due to increased availability of agricultural land suitable for cereal crops cultivation; and
- Decrease in the daily and seasonal workload.

Meanwhile, as the study moved from Pratappur VDC of Kailali District in the far west *Terai* to Amahibelaha VDC of Sunsari District in the eastern *Terai*, following observations were made:

- Longer history of settlement;
- Increase in out-migration of the poor in search of daily labour employment;
- Rise in population density;
- Decline in the proportion of people experiencing food scarcity;
- Rapid shift from subsistence to commercial agriculture;
- Decrease in dependency on agricultural research of India;
- Decline in poverty levels; and
- Lighter daily and seasonal workload of women.

Pratappur and Amahibelaha exemplify how the *Terai* region remains as the area with the widest potential to provide basic food and industrial crops to Nepal. Despite both *Terai* study villages producing surplus food in the aggregate, however, the majority produce less than what is required for year round self-sufficiency. Many of the poorer households sell their food crops shortly after they harvest them in order to clear their debts and raise cash, but later purchase these same crops at much high prices through income earned from the sale of their labour or livestock.

Karnali and nearly the entire mid- and far-western hill economy, and not only Rara, seem dependent on unskilled labour employment in India. Unless this situation is reversed and seasonal migration becomes just one of the alternatives available to villagers, the food security and the poverty situation in the Karnali area will not change in the near future.

Although livestock raising used to play a crucial role in sustaining local livelihood and hence considered an integral part of the mountain farming system, this study found the contribution of livestock to be declining. The interdependency among the three rural subsectors (i.e. farming, animal husbandry, and forestry) is unique to the Nepalese farming systems. A small imbalance in one sector can thus lead to a crack in the entire crop-livestock-forestry structure as has been the experience of Rara VDC in Mugu District.

The importance of seasonal migration has been more pronounced and visible in Mugu, the most inaccessible district in the mountains, followed by the hilly district of Achham, Kailali in the western *Terai* and Sunsari in the eastern *Terai*. People used to go to India for a fixed period, returning just in time to help their families in farming. However, with the increased incidence of poverty, the system appears to

be breaking down and people now overstay in India to pay their debts back at home or earn a little more to support their families for a few more months.

Even though an increase in employment opportunities and jobs in Nepal is not likely to bring the out-migration of the country's poor down to zero, this study reveals that the flow of people will likely decline provided that sufficient work is available in the village and neighbouring areas.

Farmers still face problems endemic to traditional agricultural development such as a lack of improved seeds, fertilizers and equipment. Local farmer's access to external inputs such as chemical fertilizers, seeds, veterinary medicines and credit was also still relatively poor.

The impact of the APP has not been visible at the village level in terms of increased use of fertilizers, expansion of irrigated areas and higher adoption of new and improved technologies. Moreover, district officials are not fully aware of the plan's strategies and approaches and appear confused. Adequate efforts have not been made to facilitate implementation of APP at the central level. The plan's implementation seems to have suffered due to the lack of resources, weak commitment of government workers and poor monitoring and supervision, aggravated by unclear objectives, inadequate planning and weak resource provisions.

The impact of agricultural extension seems poor and people in all the study VDCs hardly appreciate the present role of the local agricultural extension institutions – both ASCs and LSCs. The triangular linkages between farmers, research and extension have reportedly been very weak. Women's access to extension services is said to be almost non-existent.

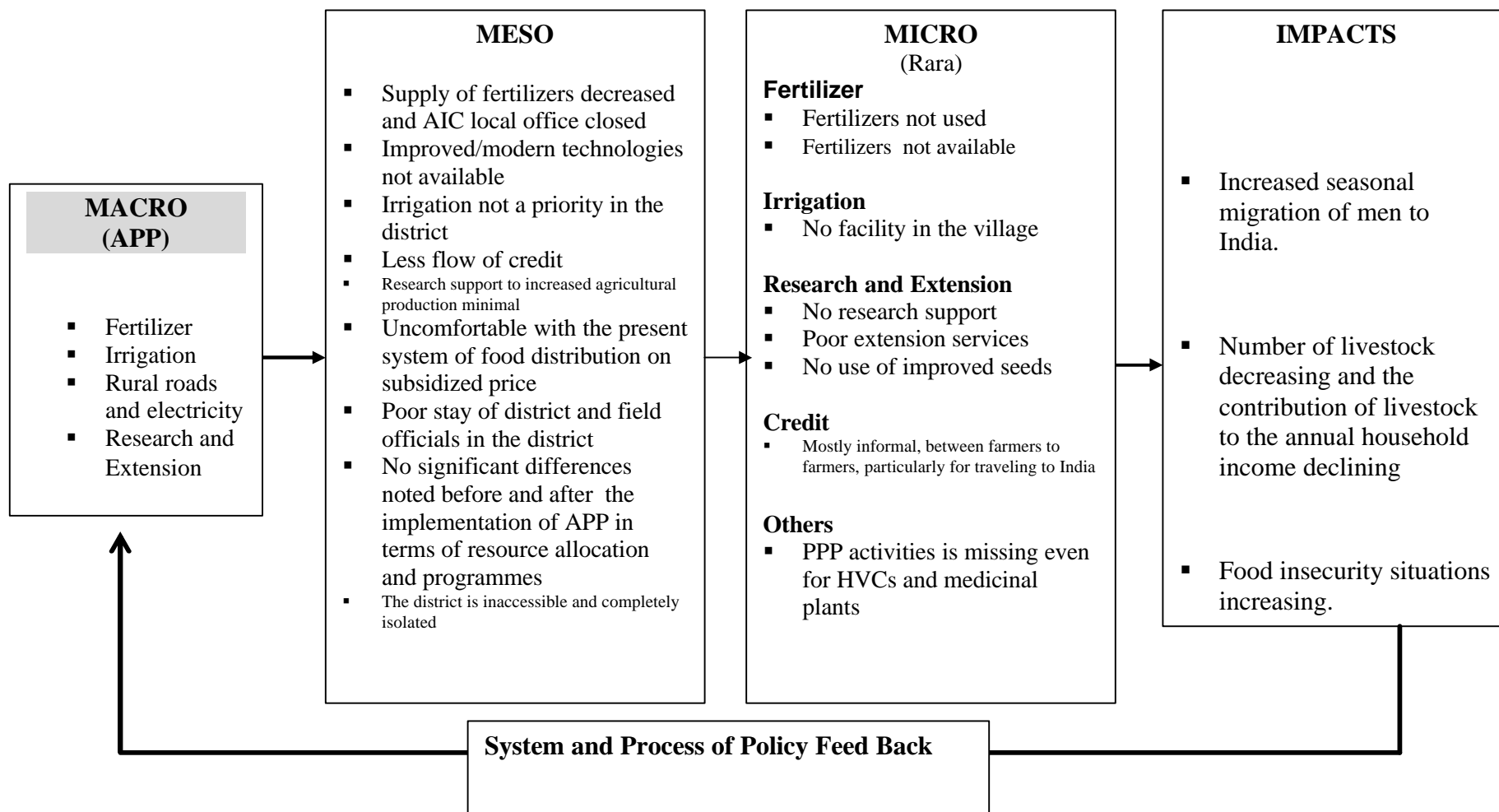
Although women are found to be increasingly involved in various saving and credit programmes run by various agencies, it seems unlikely that these vehicles will contribute much to generating employment for women or contribute to their economic empowerment due to duplication of schemes, lack of coordination and poor linkages among the project promoters. These problems are apart from the built-in weaknesses of such programmes, or primarily their limited coverage.

The lack of coordination and linkages between the different organizations related to agricultural development operating in the VDC continues to be a problem. The importance of complementarities has yet to be realized by the people working at different organizations at different levels.

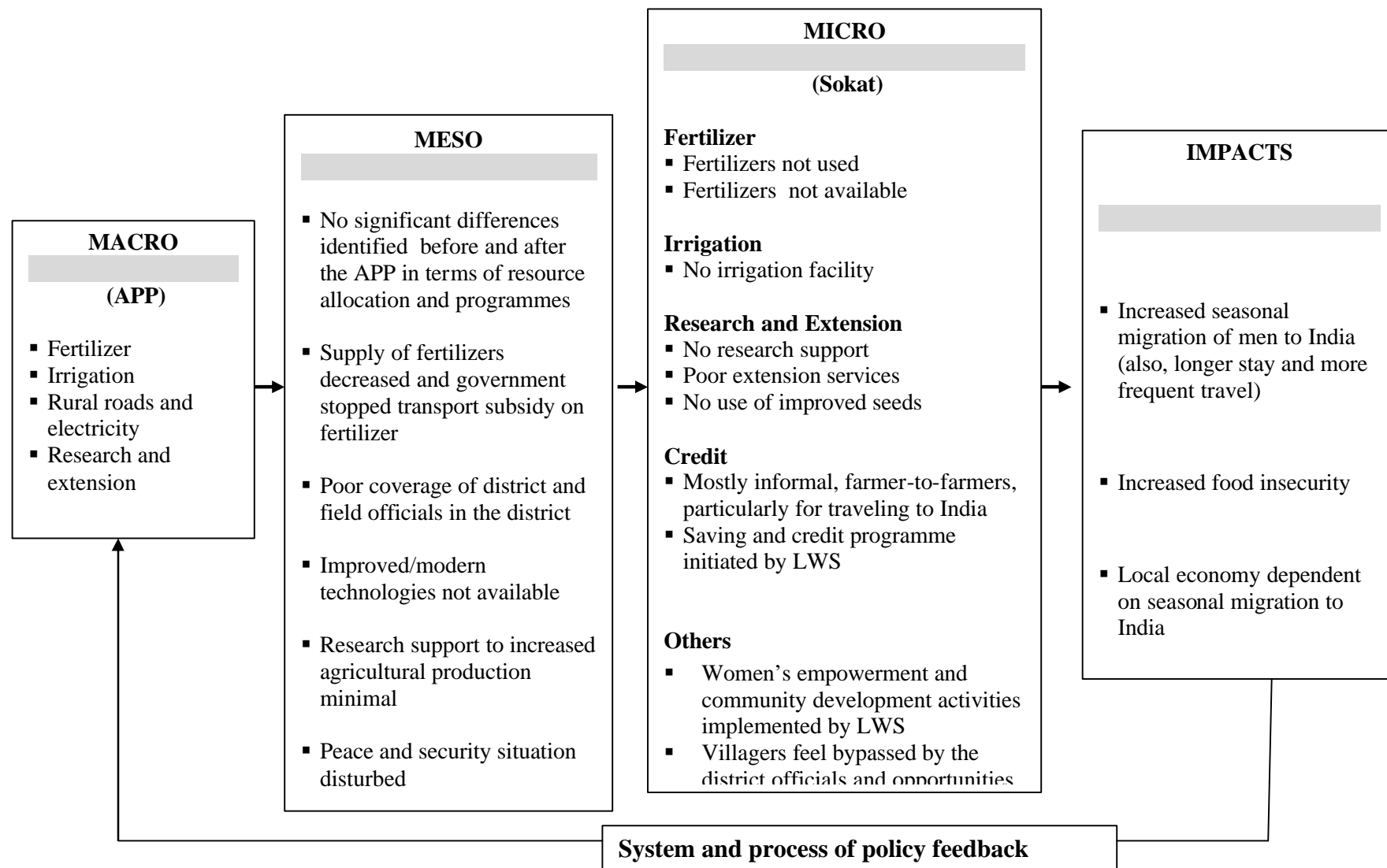
Development of the Karnali region, one of the most remote mountainous regions of Nepal, is unlikely with the current national development strategy, which is integrated with liberalized markets. Therefore, the formulation of a strategy that takes into account the needs and aspirations of the Karnali people, the region's resources (e.g. human power, natural resources) and local opportunities and constraints is needed to spur development.

As a parting note, the following four flow diagrams (Figure 7.9 to 7.12) based on the findings of the study and the discussions at the district workshops summarizes how the policy has been translated from the central or macro perspective to the meso level and finally to the micro level or VDC setting.

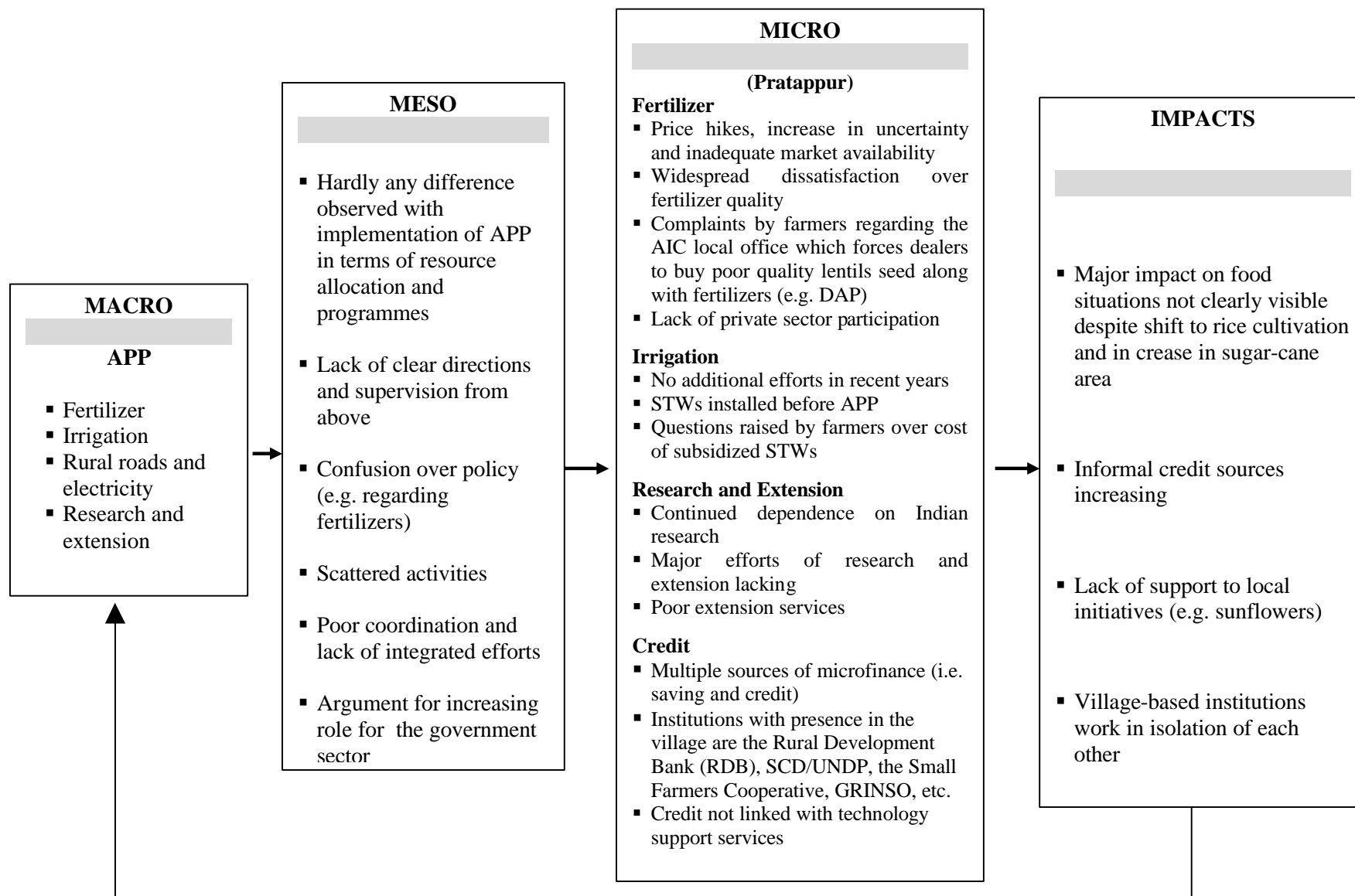
**Figure 7.1: Flow of APP policy from the macro to micro levels and the impact at the village level in Mugu**



**Figure 7.2** Flow of APP policy from the macro to micro level and impacts at the village level, Achham



**Figure 7.3 Flow of APP policy from the macro to micro level and impacts at the village level, Kailali**



**Figure 7.4** Flow of APP policy from the macro to micro level and impacts at the village level, Sunsari

