LINKING RELIEF, REHABILITATION AND DEVELOPMENT PROGRAMME (LRRD) IN AFGHANISTAN

RURAL DEVELOPMENT: AGRICULTURE IN CRISIS
Case Study of Roy-e-Doab District
Samangan Province, Afghanistan

Executive summary

2006
Amath Pathe M. Sene
with the supervision of Peggy Pascal
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Afghanistan has been badly affected by twenty years of conflict and more recently three years of drought (1999 and 2001). Since 2001, the country has engaged in a wide-sweeping rehabilitation and development process. Two distinct periods can be identified:

- **2001-2003**: The new Afghan government led by Hamid Karzai following the Bonn process has received substantial financial support from the international community in order to rebuild the Afghan economy.
- **2003-2005**: Food security was the main objective for all NGOs and the Afghan government. Until 2005, national policy focused on market economy and privatisation.

These periods are marked by swift changes that facilitated the progressive recovery of farming systems in a more stable context.

The Afghan economy is based primarily on agriculture, occupying 80% of the population. Only a very small proportion of land in Afghanistan (about 15%), mostly in scattered valleys, is suitable for farming: about 6% of the land is currently under cultivation. Rainfed areas are used for farming but production is limited due to climate variation.

The most important crop is wheat, followed by barley, corn and rice. Cotton is another widely cultivated crop. Fruit and nuts are among Afghanistan's most important exports. Additionally, livestock is nearly as important as arable farming in Afghanistan's economy. The main livestock sub sectors are small ruminants (sheep and goats). Dairy products are less developed and breeding remains unimproved. However, Afghanistan is a major supplier of opium in the international drug trade with poppy production.

The agricultural sector is faced with various constraints that have a negative impact on food security recovery. The local economy in most provinces is based on agriculture alone and which means that populations are highly susceptible to minor upheavals or shocks.

In Roy-e-Doab District, where this case study takes place, agriculture is evolving since over a decade of conflict and crisis situations. Farming systems are particularly susceptible to shocks, such as natural upheavals (climate and topography) and institutional and political factors. Production means, both from agriculture and animal breeding, remains hypothetic and this is a significant limitation for the implementation of a proper and sustainable development scheme.

The district is renowned for its remoteness and widespread food insecurity that can swiftly become a humanitarian crisis, if the wheat harvest is insufficient. The landscape is mountainous with narrow and short valleys, with altitudes ranging from 2,000-3,500m. Cultivable lands are few and far between given the topography. The majority of the population lives in very remote villages. All of these factors mean that the area is very sensitive to climatic factors (harsh winters, rainfall, snowfall).

Production is severely affected by recurrent droughts which have a negative impact on yields. The narrow valleys also limit the possibility to intensify production processes. The short cropping season is one of the consequences of climate variation between the winter season and the summer season. One harvest is therefore possible per year. The rangelands are also influenced by the climate and local communities are accustomed to moving their livestock to other areas in search of pasture according to the season (transhumance).

In addition to natural factors, institutional and political factors have slowed down recovery in the agricultural sector. Farming systems are recovering from twenty years of war during which farmers' means of production and capacity were damaged. The new government does
not have the necessary capacity to support the rehabilitation and development of rural areas. In Roy-e-Doab District, Solidarities is the only NGO who is currently working there and, in some cases, it acts as a substitute for the Afghan state. The NSP, on which Afghan policy is based, is less focused on food security projects. Local communities are dependent on aid and are not necessarily ready to engage in participatory approaches. In the national context, increasing levels of violence are affecting the rehabilitation process.

All these factors that are having an impact on farming systems in Roy-e-Doab District raise the following question. What is the best strategy for supporting and improving a targeted agriculture which is evolving in a post-crisis context?

These studies within the Linking Relief Rehabilitation and Development (LRRD) programme, funded by the European Commission, aim to make recommendations for rural development actors working in fragile areas such as Roy-e-Doab District. The general objective is to learn lessons from previous projects and determine new perspectives for improving the quality of humanitarian projects across the spectrum in Afghanistan, from emergency relief to development.

To achieve this general objective, our study was designed to:
- conduct an in-depth analysis of farming systems with a good understanding and comprehensive view of local practices;
- develop a comprehensive understanding of how farming systems have evolved over time;
- develop a comprehensive understanding of coping mechanisms adopted by farmers during crises (drought, war).
1. Background

This study was conducted from May to November 2006 and structured around a framework provided by Groupe URD and Solidarités. Interviews were carried out with key informants from communities and included crop/livestock producers, members of the community development council, shura, Afghan women, shopkeepers, landless families, daily workers, Solidarités staff and representatives of the district government in Roy-e-Doab District. In total, 75 surveys were conducted with heads of households in the villages. The district was divided into four areas where Solidarités is currently working. Extensive use was also made of key agricultural reviews in the Afghan context from AREU, Groupe URD, other INGOs, UN agencies and Universities.

Figure 1: Map of Samangan province

![Map of Samangan province](image)

Source: AIMS

1.1. Presentation of the area

Roy-e-Doab district is located in the central region of Samangan province. The district is one of the poorest in Afghanistan, given its high vulnerability to climatic risks Making a living from agriculture and animal breeding remains very uncertain.

The population of Roy Doab district is estimated at 13,000 families (100,020 inhabitants – 2005 NSP census) which are divided up amongst 153 villages. In 2002, the population was estimated at only 78,000 people. The population includes the Tatars (65%), the Hazaras (20%) and the Habaches (15%). The Roy Doab district is surrounded in the south by Bamiyan Province and Kahmard district, in the west by Dar-e-Suf district, in the north by Khuram Wa Sarbagh district and in the east by Dahan-e-Ghori district in Baghlan province.

The district is highly remote and there is no road suitable for vehicles at the western and northern tips so these areas effectively run into a dead end. During three to four months in winter, the district is often cut off by snow from neighbouring areas and access to markets is limited. Given the length of the winter season, only one harvest is possible per year. Each year, the area is subject to recurring drought and with rainfall at around 350mm per annum; the rivers are mainly filled up with melting snow from April to May.
Agro-pastoral farming systems are the most important economic activity in the area, with extensive breeding (sheep and goats) predominating. Most of the agricultural land is composed of rainfed areas with very unpredictable yields. All of the production takes place in irrigated land in the valleys which represents just 2% of cultivable land. Agriculture in the valleys is mainly composed of wheat production (98% of land) while fodder and potato crops occupy the rest (2% of land).

Most farming systems in the area are based on extensive livestock breeding (sheep and goats). Farmers make the most of the wide rangelands by migrating seasonally with their animals (transhumance) between Roy-e-Doab district and Samangan plain.

Farming systems in the district have deteriorated in varying degrees for almost 25 years. A combination of war, civil conflict, migration and neglect had very negative impacts on the natural resources, infrastructure, local institutions and an economy.

To support local communities, Solidarités has been carrying out widespread emergency distributions since 2001, aiming at stabilising the influx of refugees and/or IDPs who are returning to their area of origin. Since 2004, thanks to the favourable climatic conditions, more development-oriented activities have been conducted promoting food security amongst rural populations. Nevertheless, high levels of structural vulnerability in an area which is prone to recurrent drought are preventing the inhabitants of the Roy-e-Doab district from achieving proper food autonomy.

While Solidarités was carrying out a development project in the district, drought struck once again in 2006. This purpose of this study is to recommend new operational approaches in the transition from emergency to development without impeding the natural coping mechanisms of affected populations.

1.2. **Historical evolution of farming systems**

To understand how current farming systems function, it is important to understand the historical evolution of farming systems in the area.

In Roy-e-Doab district, farming systems can be seen to have evolved in four major periods.

**Phase 1.** Before 1930, the district was mainly composed of pasture used by nomadic and semi-nomadic breeders from Tajikistan and north of the district. The green pasture of Roy-e-Doab provided grass for all Kutchi\(^1\) transhumance, a seasonal migration system with livestock in search of better pasture during the summer season.

Steadily, some families began to settle in the area from 1900 onwards. They continued to migrate on a seasonal basis between their village and the northern pasture.

**Phase 2.** From 1930s onwards, the majority of families were settled and changed from nomadic people into sedentary communities under the national settling policy of Zaher shah. After the Tatar ethnic group, Tajiks and Hazaras also settled in Roy-e-Doab district. As well as livestock production, the new inhabitants branched out into agriculture, but mainly wheat crops on irrigated land. Gradually, breeders changed into agro-livestock producers with more irrigated land for fodder. Rainfed land was included in farming systems later on after settling. Crop diversification meant that vegetable were integrated around 1950, especially potatoes and onions. During this period, the Afghan government closely supported rural development,

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\(^1\) Nomadic people
providing basic services to producers. Farming systems were seriously affected by drought in 1961 and 1971-1972, reducing many families to a famine situation.

**Phase 3.** With the onset of the Russian war (1979-1989), production dropped significantly and villagers left their land and flocks in order to migrate to more secure areas (Bamiyan, Aybak, Iran). The selling off of assets commenced with flocks and then land. Production was just about possible in some areas where local commanders ensured a reasonable level of security. Animals were commandeered and used as zakat\(^2\) or food for war efforts by local commanders.

**Phase 4.** During the civil war and Taliban regime from 1992 to 2001, farming systems were paralysed and trade between villages and markets were immobilised due to the Taliban blockade. The severity of food insecurity was further impacted by the drought (1999-2001). At the end of 2001, the situation was so severe that emergency aid was brought by the international community. Solidarités was the first NGO to provide a response to Roy-e-Doab district. Solidarités firstly launched an emergency programme with a cash-for-work scheme and then focused on strengthening farming systems in order to encourage the return of refugees and IDPs and restore food security to the area. To help rebuild the agricultural sector, Solidarités supports the crop and livestock sector by distributing improved seeds, monitoring beneficiaries and providing training via progressive Ray Farmers (PRF). Those selected to benefit from this programme have to share their new skills with their neighbours and thus participate in the food security commitment.

Farming systems had progressed from a crisis situation to stability. The past five good years have contributed to the recovery of the rural sector. However, in 2006, farming systems in the area were affected by drought, making many households vulnerable once more.

At present, food security has not been achieved and farming systems in Roy-e-Doab have to resist or evolve in order to cope with the various risks. With this understanding the history of farming systems in the area, it is important to assess how we could support a sustainable development of rural sector that has to be able to cope with both emergency situations and the development context, this is the case of Roy-e-Doab district.

### 1.3. Natural resources management

Resources in Roy-e-Doab have been managed by the community and private individuals since the area was settled. The main resources that are managed by communities are pasture and water.

Within each territory, a social organisation is in charge of local management of resources. This social organization is based on Quaum\(^3\) which is central to Afghan society. Between villages, resource management is also based on an agreement which defines how resources

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\(^2\) Zakat (tithing) constitutes one of the five pillars of Islam. The concept of Zakat defies simple definition. Although it has commonly been defined as a form of charity, almsgiving, donation, or contribution, it differs from these activities primarily in that they are arbitrary actions. Zakat, by contrast, is a formal duty not subject to choice. It compels believers to disburse a specific amount of their wealth and it conditions their identity as Muslims on their willingness to adhere to this fundamental precept of Islam.

\(^3\) Network of social ties and solidarity, with a territorial or kinship basis, with varying exist at different levels: from the village or mosque, to the tribe or even an entire ethnic group.
should be shared. In the case of disputes over resources, the shura is responsible for resolving the problem. Several disagreements over pasture management arose during the various crises (drought, war).

Over time, inheritance practices have meant that land has been divided up into increasingly smaller plots of land, to the extent that many have become unviable. In addition, from 1970 onwards, a new generation of landless people was living in the area.

The selling off assets, especially land and flocks, is the first strategy adopted by farmers when faced with a crisis. However, this makes resource management more complicated and has resulted in a large proportion of landless families that cannot be targeted by traditional rural projects.

**Figure 2: The impact of social organization on resources management**

- Main tribes: Tatar, Tajik, Habache, Hazara
- Quaum
- djame
- Family
- Household (one or many families)
- Private management (Obi, lalimi, flocks)
- Public management (water, pasture/flocks, Ayloks)

*Source: P. Sene*
The district is hugely diverse in agro-ecological terms, which explains the various farming systems and coping mechanisms relating to each area. The district can be divided into three geographical regions:

Lower areas between 1,800-22,00m. On irrigated lands, farmers use the following crop rotations: wheat/clover/alfa alfa for six years; Potato/wheat/clover/alfa alfa for four years, fruit trees (apple, peach, etc.), poplar (roof).

Intermediate areas from 2,200-2,600m

Upper areas from 2,200-3,000m: Farmers use the following crop rotations: Wheat/clover/alfa alfa for four years, Potato/wheat/clover/alfa alfa for four years, Wheat/potato/onion for four years. In both lower and upper areas, rainfed farming systems grow Wheat/barley for two years and Wheat/fallow.

Crop production is closely related to livestock breeding. Five farming systems can be described for livestock production.

- System 1: Sheep and goats with flocks of 400 heads, 200 -500 heads, 5-10 heads
- System 2: Dairy cattle (less than five heads)
- System 3: Oxen
- System 4: Donkey & horse
- System 5: Poultry production

Interaction between crop production and livestock has resulted in the dominant agro-pastoral system in the zone.

1.4. Livestock as cash flow

People keep livestock as a source of food and income, invest in livestock as a form of saving and use them for their power (e.g. riding, for transporting goods, ploughing or pulling carts), and as assets for social obligations, such as marriage and religious ceremonies (Aid el kebîr, Ramadan).

Farmers move their livestock in search of pasture over the year between Roy-e-Doab and northern plains. The transhumance system is a means of feeding animals. Migratory systems tend to develop where environmental factors such as rainfall, temperature and vegetation growth are extreme and unreliable. Critical factors include the amount and distribution of rainfall, water by melting snow or access to fodder. Recurrent drought causes flock sizes to vary. In the case of a natural disaster, such as drought or lack of pasture, owners expect to lose large numbers of animals every year and keep many animals as possible to ensure that some remain after a shock or disaster.
Other insurance strategies include splitting the herd, giving or loaning animals, having an excessively large herd which can be quickly sold off to generate cash or to pay for herding, access to water and pasture in distant areas.

Feeding management is based on resource availability. The transhumance calendar is closely related to pasture. During the year, animals are kept in and around the valleys from December to February and are fed the winter stock of clover and alfa alfa. Transhumance begins in February and lasts up to June in Samangan plain. Flocks of 400 heads migrate for better pasture. All animals will return to Roy-e-Doab from June onwards and all animals rejoin the ayloks pasture. At this time, the grass is long and plentiful in the rangelands and provides all the necessary food for the animals. This is also the period that villagers move to summer camps in the ayloks. At present, livestock breeders are facing serious problems, including loss of livestock, decreased productivity due to declining fodder, overgrazing and animal diseases, which are not being treated appropriately. Most of the irrigated land that formally supported livestock is without water during the drought. The small poultry flocks that were almost exclusively owned and managed by women have disappeared from many households with the bird flu warning announced by the FAO. Livestock mortality rates are high due to FMD, enterotoxaemia, anthrax. Seasonal migration is also one of sources of contamination.

1.5. **Crop production**

Wheat is the main crop grown on both rainfed and irrigated land. In addition to wheat, potato, fodder and vegetables are recent additions to the crop rotations. Rotation is a technique that developed locally, allowing villagers to manage land fertility and production.

According the three geographical zones, we can identify theses categories of crops:

**Table 1: Types of cropping systems**

<table>
<thead>
<tr>
<th>zone</th>
<th>Crops</th>
<th>Fodder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mountainous areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher villages</td>
<td>Types of crops: wheat, potato, onion</td>
<td>Types of crops: alfa alfa</td>
</tr>
<tr>
<td></td>
<td>Crop rotation:</td>
<td>alfa, clover</td>
</tr>
<tr>
<td></td>
<td>wheat/potato/onion/wheat over four years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>wheat/ fallow land</td>
<td></td>
</tr>
<tr>
<td><strong>Continental semi-arid areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate villages</td>
<td>Types of crops: wheat, barley, potato, vegetable</td>
<td>Types of crops: Clover, alfa alfa</td>
</tr>
<tr>
<td></td>
<td>Crop rotation:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>wheat/ fallow land or barley/ fallow land over two years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alfa alfa, clover</td>
<td></td>
</tr>
</tbody>
</table>
Wheat/ potato/luzerne, clover over three years
Wheat/barley/ fallow land over five years
Potato/wheat/clover, alfa alfa over three years
Potato/wheat/alfa alfa over four years
wheat/ dry fallow land

<table>
<thead>
<tr>
<th>Lower villages</th>
<th>Types of crops : wheat, barley</th>
<th>Type of crops: Clover, alfa alfa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crop rotation: alfa alfa, clover over five or six years</td>
<td>Crop rotation: Alfa alfa, clover</td>
</tr>
<tr>
<td></td>
<td>wheat/barley on rainfed land</td>
<td></td>
</tr>
</tbody>
</table>

Source: P.Sene

1.6. Typology of farmers

The combination of crop production and livestock allows us to determine three categories of crop/livestock producers:

1) Large crop/livestock producers represent 22% of farmers interviewed (n=75) with flocks of more than 100 heads and 82 jeribs\(^4\) of irrigated land per household, 6,000 jeribs of rainfed land. This category is less affected by crisis. Their main income comes from livestock (52%) whereas crops represent 44% of total income and off farm activities 4%. Average revenue per annum stands at USD219 per person in charge and USD211 only from farming systems.

Figure 4: Revenues of large farms

Source: P.Sene

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\(^4\) Afghan surface area = 2000m\(^2\)
2) Medium crop/livestock producers represent 34% of people interviewed with flocks between 30 and 100 heads, and 13 jeribs of irrigated land and 56 jeribs of rainfed land. They are vulnerable to crisis. For this category, income from livestock is quite equivalent to income from crop production (48%) and off farm activities represent 4%. Total revenues per year stand at USD129 per person in charge and just USD115 only from farming systems.

Figure 5: Revenues of medium farms

![Figure 5](image)

Source: P. Sene

3) Small crop/livestock producers represent 44% of people interviewed and they have 7 jeribs of irrigated land and 30 jeribs of rainfed land. They are most affected during the crisis. Off farm activities (29%) is more important in total income due to the lack of money from agriculture and livestock. These families are obliged to send their boys to the cities to find a job. Livestock generates just 31% of total income and crop production 46%. Income per annum is USD52 per household and just USD40 from farming systems.

Figure 6: Revenues of small farms

![Figure 6](image)

Source: P. Sene

1.7. Role of women in agro-pastoral systems

In Roy-e-Doab, women play a central role in agro-pastoral systems. Their contribution to the farming system often goes unnoticed as much of their work takes place in the privacy of the homestead. Besides domestic tasks, such as preparation and cooking of bread, making tea and cooking meals, cleaning the house and maintenance, collecting water, washing up dishes and cleaning clothes, collecting bushes for fuel, sewing clothes and weaving goods and clothes, embroidery, preparation for transhumance, taking care of children (food,
hygiene, clothes, etc.), providing education for girls in the house, women are also in charge of:

1.7.1. Agriculture

- Weeding
- Potato feet cutting
- Potato harvesting
- Potato planting
- Wheat harvesting
- Wheat threshing
- Wheat thinning
- Drying fruit and vegetables

1.7.2. Animal husbandry

- Harvesting fodder and grass
- Cutting fodder and grass
- Collecting water
- Feeding animals
- Giving animals water
- Collecting and processing manure
- Cleaning stable and maintenance
- Watching over births
- Making sure the young are fed correctly
- Traditional daily healthcare for animals
- Hand milking animals
- Milk processing
- Cleaning wool and processing

To support women in their efforts, Solidarités has set up women’s PRF. These beneficiaries receive an improved milk separator to reduce the time involved in processing milk and improve hygiene.

The new milk separators allow women in the village to speed up dairy processing. In the same way, a cooperative of milk separator could be set up for vulnerable women with no cash.

1.8. Markets

The market chain is not highly developed and as products make their way from the farm to markets, numerous traders hike up the prices. It is mainly livestock that is sold in the market are animals during the summer season, four months after the lambing or calving season. Only young male animals are sold in the bazaar of Aybak, pul khumri.

The main actors in the market chain are:
- Producers (livestock breeders);
- Intermediaries (traders, Afghan and Pakistani shopkeepers).

Animals and sub products drop in value during their journey from the field to market. Market behaviour changes according to the season. During the 2006 drought, the price of livestock dropped considerably due to lack of fodder.
Market analysis showed that livelihood is related to farmers’ capacity to sell young male livestock during the year. This allowed farmers to purchase goods directly (rice, sugar, soap) from Aybak market.
2. The consequences of the 2006’s drought

2006 was particularly dry in Roy-e-Doab district. This new drought affected all the farming systems and weakened all production assets. The same coping mechanisms adopted in the past were also apparent this new year, such as migration, selling off assets and indebtedness.

2.1. Effects of the drought

2.1.1. Effect of drought on water availability

The deficit of snow during the 2005-06 winter and rainfall in spring of 2006 had a serious impact on water availability for both drinking and irrigation purposes. The aquifers did not fill up as usual and all water sources (rivers, springs, wells) have been badly affected. The high temperatures, and thus high evaporation rates, during the summer of 2006 made this situation worse, especially as crops were irrigated half as frequently as normal. Today, water levels and water flow are at their lowest and the quality of drinking water has also become a cause for concern.

Figure 8: Access and utilization of water

<table>
<thead>
<tr>
<th></th>
<th>Depth of snow (meters)</th>
<th>Number of days of rain in spring (days)</th>
<th>Depth of water in the village well mid-august (meters)</th>
<th>Average number of days between 2 irrigations (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average year</td>
<td>1</td>
<td>18</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>2006</td>
<td>0.35</td>
<td>5</td>
<td>21</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: P.Sene

2.1.2. Effect of drought on wheat production

The lack of rainfall caused average wheat yields to plummet from 405kg/jerib to 155kg/jerib on irrigated land (a drop of 62%). In terms of wheat cultivated on rainfed land, average yields can generally reach up to 155kg/jerib but in 2006, only very limited surfaces have actually been harvested (only 10% of the total wheat crops in rainfed areas).

Figure 9: Average wheat yields

Source: P.Sene
Not only have yields dropped, but the average price of wheat grain in the bazaars, whether at the district or provincial level have substantially increased, reducing local farmers’ purchasing power.

Figure 10: Fluctuation in cereal prices

![Fluctuation in cereal prices](image)

Source: P.Sene

2.1.3. Effect of drought on fodder crops

Farmers had already begun to use the fodder crops that were harvested for winter stock as flocks and herds returned from the summer pastures six weeks earlier than normal years.

Also, the pressure on natural vegetation in summer pastures is much higher than usual. Deterioration of the grass production potential for next year and increased erosion are the most important negative impacts.

2.1.4. Effect of drought on animal breeding

This year, due to the drought, the availability of fodder is very scarce and animals are not consuming their usual amount of food. Animals are tending to consume poorly nutritious bushes which may cause health problems. Also, the weakening of health status of animals will increase morbidity and mortality rates through latent infectious and epidemic diseases.

Breeders from Roy-e-Doab districts have begun to sell off their animals. The young are sold first but it is likely that the female animals will also be sold off before winter in order to purchase wheat grain before winter. The selling off of female animals jeopardises farmers’ production means for next year as it will be extremely difficult for them to build up their flocks. One of the first consequences of this unexpected and early sale of livestock is that the livestock market of Aybak (Provincial capital) is overwhelmed and prices have dropped significantly.
2.1.5. Effect of drought on land property

For the smallest farmers who do not have the capacity to sell off large numbers of animals, selling off land is an alternative solution in order to generate income for the household following such low wheat yields.

Some of these farmers may end up selling all of their land but this is unlikely to resolve their financial problems because land tends to fetch lower prices during a drought.

2.1.6. Effect of drought on natural resources

Farmers tend to overuse the summer pastures due to the lack of wild fodder vegetation. Overgrazing dangerously compromises the production potential in terms of quantity and quality of fodder crops for the following year.

Increased competition amongst breeders for the summer pastures accelerates the process of deterioration of the highland ecosystem as erosion is another direct consequence of the drought.
2.1.7. Effect of drought on household diet

Most of breeders stop milking the female animals to ensure that lambs and young goats have a minimum amount of milk. Milk production has therefore decreased drastically and dairy products that were commonly used by households are no longer available.

2.2. Coping mechanisms

2.2.1. During the war

Coping mechanisms were based on:
- Selling off assets: All flocks were sold or used as food by the Mujahideens. The cash raised by selling off flocks allowed farming families to migrate.
- Migration: With the money raised, villagers migrated to the more secure areas, such as Bamiyan, Pul khumri and Iran.
- Join local commanders: Many heads of households joined local commanders as Mujahideen. This ensured them and their families a certain degree of security.

2.2.2. During the drought

Coping mechanisms are only based on adapting farming systems to the climate change. 2006 has been classified as a dry year with wheat harvests falling on average by 62% on irrigated land, while only 10% of the rainfed areas have been harvested. The summer pastures prematurely ran out of fodder crops and the flocks have already been brought down to the villages in search of food on their journey.

The first consequence of this crisis situation is that the bidding prices for livestock have also dropped as many breeders have been obliged to sell off large numbers of animals. Food stocks before winter are extremely low and it is likely that a significant proportion of the population will migrate in order to compensate the lack of income generated by animal sales. Indeed, 25% of the heads of household are under 35 years old and this category is more prone to leave the district in search of off-farm income.

The most vulnerable group has taken out credit and shortly needs to reimburse this debt. In the past, to pay back their debts quickly, these farmers would have chosen to grow poppy. This strategic crop allowed many of them to build up their flocks and assets again. Until 2005, poppy cultivation was controlled by the district governor.

2.2.3. Changes during the crisis

A succession of crises alters social organisation over time. During all crises, small and medium livestock producers are eventually obliged to sell their flocks to large crop/livestock producers that have enough cash to purchase animals. The large crop/livestock producer has a considerable advantage, liquid assets, and is thus able to purchase material assets sold by people in need.

In this way, the crisis merely serves to increase the gap between large crop/livestock producers and the small farmers. Landowners succeed in amassing more and more land and the small landowner loses everything and becomes landless. After every crisis, including drought, the number of landless families increases while the number of large crop/livestock producers decreases.
The level of vulnerability to crisis differs from one group to another. The big landowners and breeders will not be affected by the drought in the short term. They will benefit from the drop in price of farming commodities (animals, land) as their purchasing power actually increases. During the last major drought (1999-2001), 90% of the animals were sold at ridiculous prices to traders and large crop/livestock producers and the same is occurred during the drought of 2006. The process of building up assets is always long and is still ongoing but there is every chance that farmers will soon run into another major problem. This situation has prompted all rural projects to target only the non vulnerable category in fragile areas. To cope with this situation, migration to cities and other areas where work opportunities are available seems to be the most sensible option in order to cover the households’ food requirements. Alleviating rural poverty remains a major challenge for all rural development actors given the effect that each crisis has on social organisation. This requires a good understanding of the between crisis period and the effect that the crisis has had on the development process already underway.

2.2.4. Effect of drought on farming systems

Figure 13: Effects of the drought on farmers

Source: P. Sene
2.2.5. Effect of weak economy on food security

Dairy products represent an important part of the meal for this population and families with livestock tend to have a good nutrition profile. The nutrition profile varies in the area according to the different types of crop/livestock producer.

- Large crop/livestock producers: dairy products, eggs, meat, beans, rice, tea and vegetables represent an important part of their daily meals. This category benefits from a varied diet thanks to their financial capacity, the size of their flocks and the fact that they are PRF selected to improve their production (vegetable PRF, wheat PRF, livestock PRF...).
- Medium crop/livestock producers: dairy products, tea and bread. They are unlikely to include dairy products in their diet as they only have medium-sized flocks. This group is more vulnerable to disease.
- Small crop/livestock producers, landless and flockless: bread and tea. They are extremely vulnerable with their very limited means of production. They are in a situation of permanent financial stress and are struggling to cope with the crisis.

Nutrition profiles are based on three meals a day. Dairy products from small ruminants are available from April to September. Cow's milk is available at different periods in the year but cannot satisfy the whole household's needs given that families tend to have an average of 1.5 cattle per household. The nutrition profile of the Roy-e-Doab population is typical of nomadic tribes, such as Masai, and is characterised by the predominance of dairy products and cereals.

The FAO’s definition of food security\(^5\) which is “All people at all times have both physical and economic access to the basic food they need” is not achieved in Roy-e-Doab. Despite the large flocks in the area, families do not have enough protein in their diet. Having looked closely the food security situation in Roy-e-Doab, one of Solidarités’ objectives is to diversify people’s diet during the time that the project is implemented. That could be possible with the support of all the agricultural sub-sectors (arboriculture, crops, vegetables, livestock and capacity building).

2.2.6. Food security constraints

Constraints to food availability in Roy-e-Doab include:

- Lack and inappropriate agricultural knowledge, technology and practices.
- Lack of consideration for the development of remote areas economic. Most of the agricultural programs and the development of the agro-business sector invest mainly in policies that are mainly based on areas with opportunities (e.g. plains), including pricing, marketing, tax and tariff policies.
- Lack of foreign trade: inadequate agricultural inputs; non-existent or ineffective private sector; population growth rates that offset increased production or imports; marketing and transport systems which reduce the cost-effectiveness of transporting food from source to need; inability to predict, assess and cope with emergency situations (drought or war) that interrupt food supplies.
- Climate variations; disease; lack of donor focus on some areas that are considered to be in post-emergency situations.

\(^5\) Committee on World Food Security
3. Conclusion and recommendations

In all areas where farming systems are evolving from emergency to development situations, such as Roy-e-Doab district, and focusing increasingly on market opportunities in order to guarantee food security for the increasing population, it is necessary to establish a contiguum approach. This involves taking into account the development process when a crisis prompts the need for an emergency response. The best example in 2006 is the linking of an emergency response to the drought with cash-for-work project funded by ECHO. This approach should not undermine the natural coping mechanisms adopted by the population during the drought. This new approach linking emergency and rehabilitation pioneered by Groupe URD should ideally be adopted in all types of crisis with a view to improving the quality of humanitarian work.

In order to improve emergency and development projects, stakeholders need to look at the following aspects.

**Improving field operations**
Stakeholders need to conduct an in-depth assessment prior to project implementation. A good understanding and comprehension of the area would allow humanitarian actors to improve linkage between emergency to development.

**Capacity building (NGOs, government, farmers)**
Capacity building needs to be provided, including training, community mobilisation setting up farmers’ associations and cooperatives, state building and coordination between all rural development actors. Effective transfer of skills could be done from INGOs to local government representatives. In all remote areas, local government needs to be involved and a systemic approach would help reduce rural poverty.

**Technical issues**
Dissemination of technical knowledge needs to be increased for livestock and crop management. PRF has produced good results but improvements can be made before the system is introduced to larger groups. The process of transferring technical knowledge to farmers has excluded some vulnerable groups. During the second phase of this project (2006-07), Solidarités will extend the PRF method to more vulnerable groups.

**Explore market opportunities for livestock**
Despite the weakness of the local economy, livestock still represents a means of enhancing livelihoods. To achieve this objective, production needs to be improved before and coping strategies need to be strengthening to prevent selling off assets. Markets would benefit from an improvement in the market chain from producers to consumers, transport facilities and procurement of inputs. Difficult transport in remote areas is the main constraint to market access and it is therefore necessary to improve access roads from Roy-e-Doab to the main markets (Aybak and Bamiyan).

**Ensure food security with crop diversification before embarking on project design**
Food security could be achieved by means of crop diversification and improving livestock production. Project design needs to focus on diversifying the type of crops grown and also dairy processing.

**Set up micro-credit mechanisms to support local alternatives**
To assist and support the weak economy, stakeholders need to find a means of providing villagers with cash to set up their own small business initiatives. Setting up a rural bank in Roy-e-Doab would support producers and open up new opportunities.
**Improve the role of women in agro-pastoral systems**

To strengthen the impact of project activities in the field, it is important to respect local culture with regard to women’s condition and seek to integrate women’s activities in a community development approach. Micro credit could help women to launch their own projects. Poultry projects would be a good opportunity for women to develop income-generating activities.