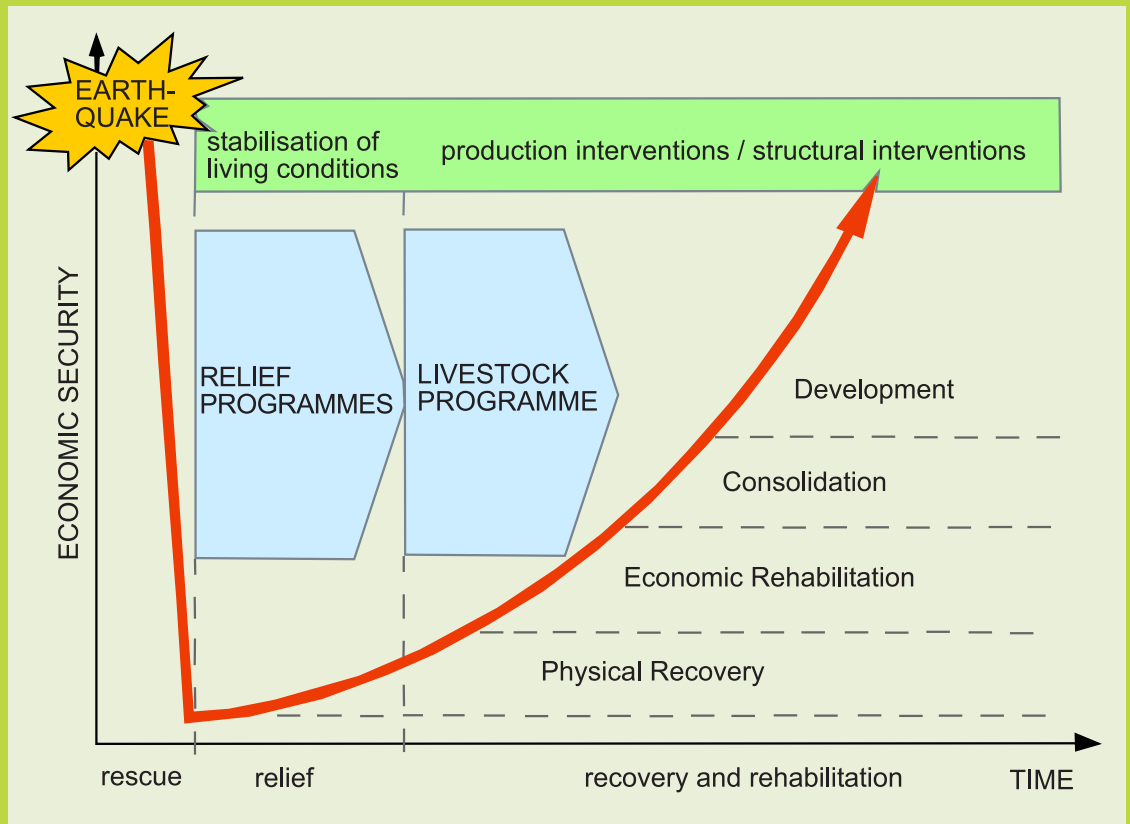


## Three Years After



**Evaluation of the GRC/ICRC Livestock Programme  
in the Earthquake-affected Areas of  
Pakistan-administered Kashmir**

Edited by  
Hermann Kreutzmann  
Stefan Schütte

Centre for Development Studies (ZELF)  
Institute of Geographical Sciences  
Freie Universität Berlin



Editor of Berlin Geographical Papers (formerly Occasional Papers Geographie)  
Prof. Dr. Hermann Kreutzmann

**Contact**

Centre for Development Studies (ZELF)  
Institute of Geographical Sciences  
Freie Universität Berlin  
Malteserstr. 74-100  
D-12249 Berlin

[h.kreutzmann@fu-berlin.de](mailto:h.kreutzmann@fu-berlin.de)

Tel: +49 - 30 - 838 70223

Fax: +49 - 30 - 838 70757

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2009



## Preface

### From emergency relief towards development

Three years after the devastating earthquake in Pakistan-administered Kashmir most relief and development programmes have gradually cut down their activities to help local communities recuperate from the disaster. In the immediate aftermath of the October 8<sup>th</sup>, 2005 earthquake a number of national and international relief organisations engaged in activities to support local communities. These activities have only rarely been evaluated to determine whether they had a mid-range or longer-lasting impact on the livelihoods of the affected people.

The report presented here is the result of an impact assessment of a livestock project implemented in the earthquake affected areas by the German Red Cross (GRC) in collaboration with the International Committee of the Red Cross (ICRC). This assessment was a joint effort of the relief and development activities executed by GRC/ ICRC, and academia from the Centre for Development Studies in the Institute of Geographic Sciences at Freie Universität Berlin. The participatory evaluation involved experienced staff from the Red Cross and representatives of village communities from the four Union Councils in Muzaffarabad District that were severely affected by the earthquake. Both acted as valuable knowledge resources, interpreters and mediators in focus group discussions and expert interviews that were conducted during the three weeks of fieldwork between March 18 and April 2, 2009. The learning experience during the mission changed the perspectives and insights of eight master and diploma students and their supervisors from the Centre of Development Studies at Freie Universität Berlin.

The prime objective of this joint programme was to evaluate the impact of a livestock package that intended to augment the livelihoods and provide a resource base for families affected by the earthquake, going beyond sheer disaster relief efforts and moving towards more sustainable development. The second objective was to identify achievements and short-comings of the livestock package in order to identify lessons-learned for future economic and social programmes in the context of post-disaster interventions.

The results presented in this report are encouraging and differentiated. For all participants it was a learning experience. This included the major challenge of determining how to evaluate the impact of a single package on the overall development of households and rural communities. The complex system of household economies and the variable sets of income sources, activities directed towards domestic sustenance and market production posed an intellectual challenge for the design of concepts and methods. In our approach we tried to understand and address these complexities by identifying different scenarios at the household level. From the aggregation of data it became obvious that certain households were better prepared to adopt and utilize offers such as the livestock package than others. The identification of eligible households with potential for success can be regarded as one of the great challenges of the programme. A second - sometimes rather neglected aspect - is the careful selection of suitable breeds of animals and the logistical burden of making the link between providers and receivers of improved livestock. Overall this evaluation found the GRC/ICRC project to have been planned and implemented with a high degree of understanding and consideration for the earthquake victims.

I would like to thank Dr. Erhard Bauer from the German Red Cross for conceiving the idea of this evaluation mission and for the generous support of the evaluation team. I would also like to thank Marc Souvignier who acted as the link between Berlin and Islamabad. In Pakistan we enjoyed the challenges posed to us by Esther Lopez from the EcoSec department of the ICRC. In Muzaffarabad Jean-Jerome Casabianca proved to be a considerate and protective head of the mission and his team created a conducive environment for our task.

Without our interpreters and section experts who accompanied the team to the field and were valuable resource persons for a multitude of questions, none of our students could have conducted the necessary focus group discussions and interviews that led to the results presented in this report. Therefore, I also express my sincere gratitude to Imran Mehmood Banday (EcoSec Secretary), Arif Ayub Qureshi (MEI Team Leader), Mamoon Riaz Mughal, Fouzia Rafiq, Amer Rasheed Malik, Mohsan Nazir (MEI Field Officers), Sayed Ali Haider Bukhari, Rubina Shaheen Awan, and Muhammad Asif (former ICRC Field Officers).

From the Berlin group I thank all participants of this course for their motivation and diligence in preparing the field visit, executing the empirical impact study, processing and analyzing the data and compiling of the report. The exercise would not have been feasible without the enthusiasm and unceasing motivation of Dr. Stefan Schuette who helped to incorporate this joint programme into the Master Studies Programme at the Centre for Development Studies at the Freie Universität Berlin.

Finally I would like to express my gratitude to all institutions, named and unidentified supporters who contributed to the success of this enterprise that helped to bridge the gap between academia and practice, between relief and development, and contributed to a better understanding of the challenges people in Pakistan face in post-disaster and everyday circumstances.

Islamabad, September 11, 2009



Participants from the Freie Universität Berlin

Prof. Dr. Hermann Kreutzmann, Chair of Human Geography and Director of the Centre for Development Studies

Dr. Stefan Schütte, Assistant Professor at Centre for Development Studies

M.Sc. Students, Geographical Development Research:

Heiko Bölk  
Stephan Eger  
Jan Geske  
Sirkka Killmann  
Daniel Maiwald  
Lisa Melcher  
Michael Spies  
Mattes Tempelmann

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## List of abbreviations

AIT	Artificial Insemination Technician
AJK	Azad Jammu and Kashmir
ASL	Above Sea Level
BHCU	Basic Health Care Unit
CAHW	Community Animal Health Worker
CBO	Community Based Organisation
CDG	Community Development Group
CMH	Combined Military Hospital
DDB	Dairy Development Board
DP	Distribution Point
DoAH	Department of Animal Husbandry
DRK	Deutsches Rotes Kreuz
EcoSec	Economic Security Unit
EcoSecCo	Economic Security Coordinator
EQ	Earthquake
ERRA	Earthquake Reconstruction and Rehabilitation Authority
FO	Field Officer
FU	Freie Universität
GO	Governmental Organisation
GoP	Government of Pakistan
GRC	German Red Cross
HH	Household
IaK	Indian-administered Kashmir
ICRC	International Committee of the Red Cross
IDPs	Internally Displaced Persons
IFRC	International Federation of the Red Cross
IRIN	Integrated Regional Information Networks
ITC	International Institute for Geo-Information Science and Earth Observation
LFAW	Livestock First Aid Worker
LoC	Line of Control
MEI	Microeconomic Initiative
MoL	Ministry of Livestock
MoU	Memorandum of Understanding
NGO	Non-Governmental Organisation
NWFP	North-West Frontier Province
PaK	Pakistan-administrated Kashmir
PIA	Participatory Impact Assessment
PRCS	Pakistan Red Cross Society
PKR	Pakistan Rupees
ToR	Terms of Reference
UC	Union Council
UN	United Nations
UNDP	United Nations Development Programme
USGS	United States Geological Survey
VO	Village Organisation
WO	Women Organisation

## Glossary

Biradari	brotherhood
Dofasli	harvesting two crops in sequence per year
Ekfasli	harvesting one crop per year
Ghee	clarified butter
Kanal	unit to measure land size in Pakistan. One kanal equals 505 m <sup>2</sup>
Lassi	liquid yoghurt
Mohallah	a locality or a neighbourhood
Shuri	pressed straw mixed with residues from wheat or rice



# Chapter 1 - Introduction

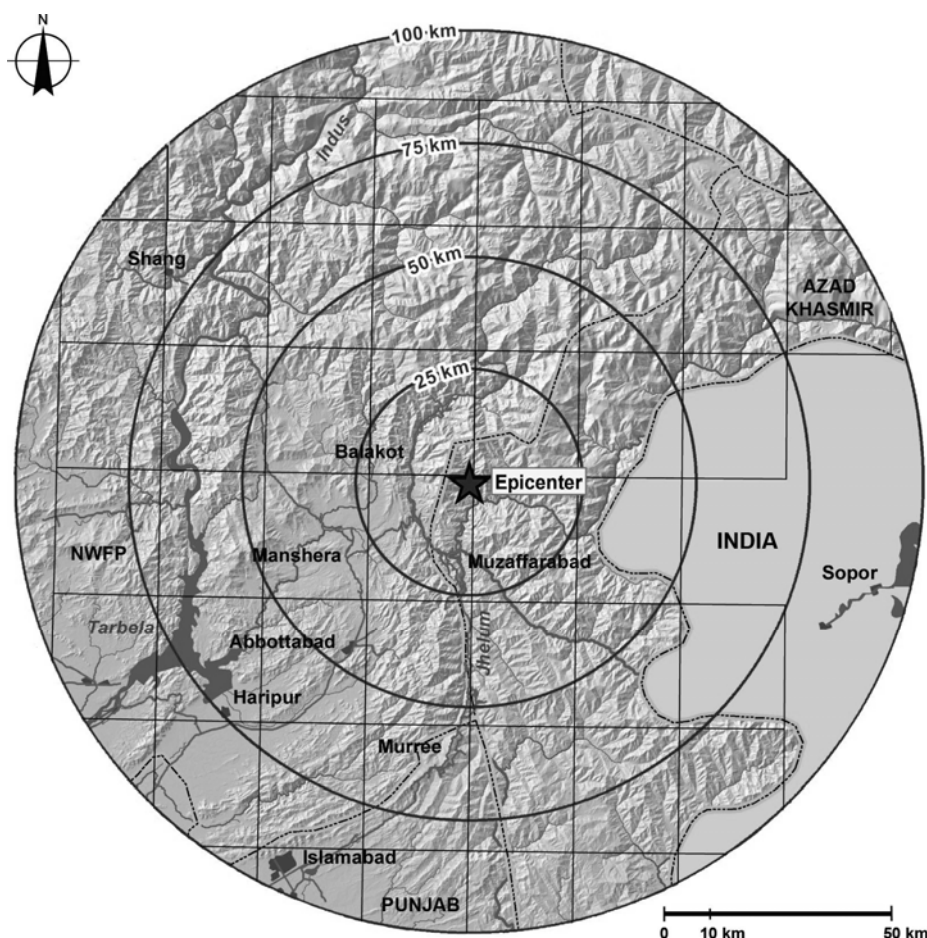
In response to the devastating earthquake that hit the northern parts of Pakistan on October 8, 2005, the German Red Cross (GRC) in partnership with the Economic Security Unit of the International Committee of the Red Cross (ICRC) implemented a complex livestock restocking programme combined with structural interventions in the basic animal health sector. The programme aimed to support people affected by the earthquake in regaining economic security, and "*...to contribute to the restoration of the livelihoods of the most vulnerable of earthquake victims to a level comparable to their pre-earthquake status*" (ICRC 2007b: 3). In order to achieve this goal, 3,201 lactating cows, most of them together with a calf, were distributed between August 2006 and October 2007 to pre-selected beneficiary households.

Livestock restocking was a new experience for both the GRC and the ICRC and indicates a shift from relief operations that are traditionally the main domain of both organisations, towards development approaches that aim to provide sustainable support for affected populations. New experiences were gained through the project implementation also for the GRC and ICRC, and in order to assess the successes and problems of the programme an independent evaluation took place over three weeks in March and April 2009, three years after the intervention. This evaluation was carried out by Masters Students in Geographical Development Research from the Institute of Geographical Science at the Freie Universität Berlin.

This report presents the findings of that evaluation, and it is structured as follows: Chapter One sets the context. It describes the impact of the earthquake and how it was responded to by aid and government actors. Special focus is directed towards the implementation of the GRC/ICRC livestock project and the challenges faced during that implementation, and the rationale for the evaluation of the project is provided. The second chapter provides a general introduction to the area of Pakistan-administered Kashmir (PaK) that was hit hardest by the earthquake. The GRC/ICRC project was carried out in the Muzaffarabad District of PaK and the specific project area is described in detail. The evaluation was built on intensive fieldwork and detailed interviews with project beneficiaries and in Chapter Three the methodological approach applied during the evaluation is introduced. Chapter Four then presents the findings of the evaluation on different levels and concludes with a typology of households that represent varying stages of project success. In Chapter Five the structural project interventions in the animal health sector are discussed and assessed, and the final part of the report provides conclusions and recommendations.

## 1.1 The setting - Earthquake and Response

On October 8, 2005 at 8:50 am a disastrous earthquake struck northern Pakistan. The epicentre of the earthquake was located in the disputed territory of Kashmir that is divided into Pakistan-administered Kashmir (PaK) and Indian-administered Kashmir (IaK). The earthquake measured 7.6 on the Richter scale, killing approximately 75,000 people and injuring about 70,000 people. An estimated 3.5 million people lost their homes. 76 percent of the entire housing stock was destroyed or severely damaged. An area of about 30,000 square kilometres was affected by the initial earthquake which lasted less than a minute (Wilder 2008: 9-13).



Source: ITC International Institute for Geo-Information Science and Earth Observation, Design by ZELF evaluation team 2009

Figure 1.1: South Asia Earthquake

The most affected area was the region close to the epicentre, located ten kilometres northeast of the city of Muzaffarabad, in the Muzaffarabad District of Pakistan-administered Kashmir (see Fig. 1.1). In 2008, the Government of Pakistan-administered Kashmir published statistics on the dimensions of the disastrous earthquake (AJK Planning and Development Department 2007).

The official data states that about half of the population of Pakistan-administered Kashmir was affected by the earthquake. 46,570 people died and 33,136 people were injured, with the majority of deaths occurring in the Muzaffarabad District, where 35,803 people died and 23,138 persons were injured. Altogether 307,429 houses were destroyed or damaged, and about 116,000 persons became internally displaced. These Internally Displaced Persons (IDPs) were temporarily shifted into 227 IDP Camps (AJK Planning and Development Department 2007).

Apart from the human losses (Table 1.1), the earthquake had a devastating impact on the local infrastructure. 810 kilometres of roads and a total of 130 bridges were destroyed. 2,706 educational institutions, including 1,852 primary, 498 middle, 298 high/higher secondary schools and one university were destroyed or damaged.

The Health Sector was also severely damaged, and 176 health institutions had to be reconstructed. In addition to human losses and infrastructural damage, the very basis for local livelihoods was also severely affected. Landslides caused damage to agricultural fields and irrigation systems. Data on the loss of livestock shows that 81,939 cows, bulls and oxen perished. Also 55,239 buffalos and 88,427 goats and sheep were killed by the earthquake (AJK Planning and Development Department 2007).

The Department estimated the losses and damages in the private and public sectors to amount to a total of 125.203 billion Pakistan Rupees (equal to 1.25 billion €) (AJK Planning and Development Department 2007).

**Table 1.1: Deaths, injuries, damages district wise**

District	Deaths	Injured	House damaged/ destroyed
1 Neelum	470	624	12,043
2 Muzaffarabad	35,803	23,138	148,412
3 Bagh	9,167	7,466	89,169
4 Poonch	1,120	1,883	55,315
5 Sudhnuti	4	25	2,490
6 Mirpur	6	0	---
Total	46,570	33,136	307,429

Source: AJK Planning and Development Department 2007

## 1.2 Earthquake Response

### Phases of Response

The response to the natural catastrophe can be divided into three major phases. The first phase was the rescue phase, where the overall goal was to save lives. The rescue phase began immediately after the catastrophe occurred. This phase lasted for a few weeks. Subsequently, the relief phase commenced. The activities in the relief phase concentrated on providing basic aid to the affected population, covering medical support and the supply of food and non-food items. The duration of the relief phase lasted about six months and was followed by the reconstruction phase. During this still ongoing period reconstruction of housing and infrastructure took place, and a gradual restoration of local livelihoods took shape.

The first on the scene who came to aid in rescue efforts and to provide relief goods were individual citizens. Pakistani citizens from all over the country donated relief supplies and thousands came to Pakistan-administered Kashmir to join and assist the rescue and relief operations. The aid of these volunteers played a major role in the immediate rescue and relief phase, even though they were not well organized (Wilder 2008: 13).

Besides the individual aid, more than a hundred national and international non-governmental organisations (NGOs), Islamic welfare organisations, UN agencies as well as international military forces provided immediate response in the rescue phase.

The Pakistan army played a major role in the subsequent relief phase following the rescue phase. The civil-military response to the earthquake was considered as one of the most effective collaborations in a humanitarian relief operation ever. The largest helicopter airlift in the history of aid operations was implemented to transport and supply aid goods. The airlift was necessary because wide areas of the earthquake-affected zone consist of remote, mountainous terrain without any roads access (Wilder 2008: 13-16). According to Shaukat Aziz, the former Prime Minister of Pakistan, it was "the largest ever humanitarian emergency air-bridge in the history of the world" (IRIN 2006: 6).

The activities in the relief phase were put under stress by the oncoming winter. About 3.5 million homeless people had to be sheltered. More than 500,000 tents and millions of blankets and sheets were distributed during the 'Operation Winter Race'. Fortunately, the winter was unusually mild. The relief efforts were generally perceived as very effective, and only very few people died due to a lack of shelter or the incapacity to treat injuries. It was also managed to avoid the outbreak of disease in the earthquake zone (Wilder 2008: 9-17).

About six months after the earthquake, the relief phase came to an end and transitioned into the reconstruction phase. The relief phase ended when the Earthquake and Rehabilitation Authority (ERRA) took the responsibility of coordinating the reconstruction activities.



The focus was now directed on rebuilding the livelihoods of the affected population. The reconstruction phase phrased as 'build back better' generated much more controversies amongst the different groups of involved actors. There was a lack of a common understanding and therefore of a common goal for the reconstruction process. The public became discontent with the slow pace of the reconstruction measures. One reason for this growing discontent was the behaviour of local politicians and civilian administrators, who felt themselves bypassed by the Army and NGO-led relief and reconstruction measures (Wilder 2008: 16-17).

The reconstruction compensation provided by the Pakistan Government was one of the most important relief efforts for people in need. The governmental Earthquake Reconstruction and Rehabilitation Authority paid 175,000 Pakistani Rupees in compensation for every destroyed house. The compensation was supplied in three instalments; the first was 25,000 PKR, with the second and third 75,000 PKR each (AJK Planning and Development Department 2007). Interestingly, these compensation payments also had the effect of increasing the number of houses in the PaK, as many households split and formed separate units in the aftermath of the earthquake in order to access the government support money.

The international aid efforts were perceived as mainly positive by the public and initially led to changes in attitudes towards foreigners and NGOs. Altogether, the combined efforts of the involved actors caused a fast mitigation of the devastating natural catastrophe (Wilder 2008: 9).

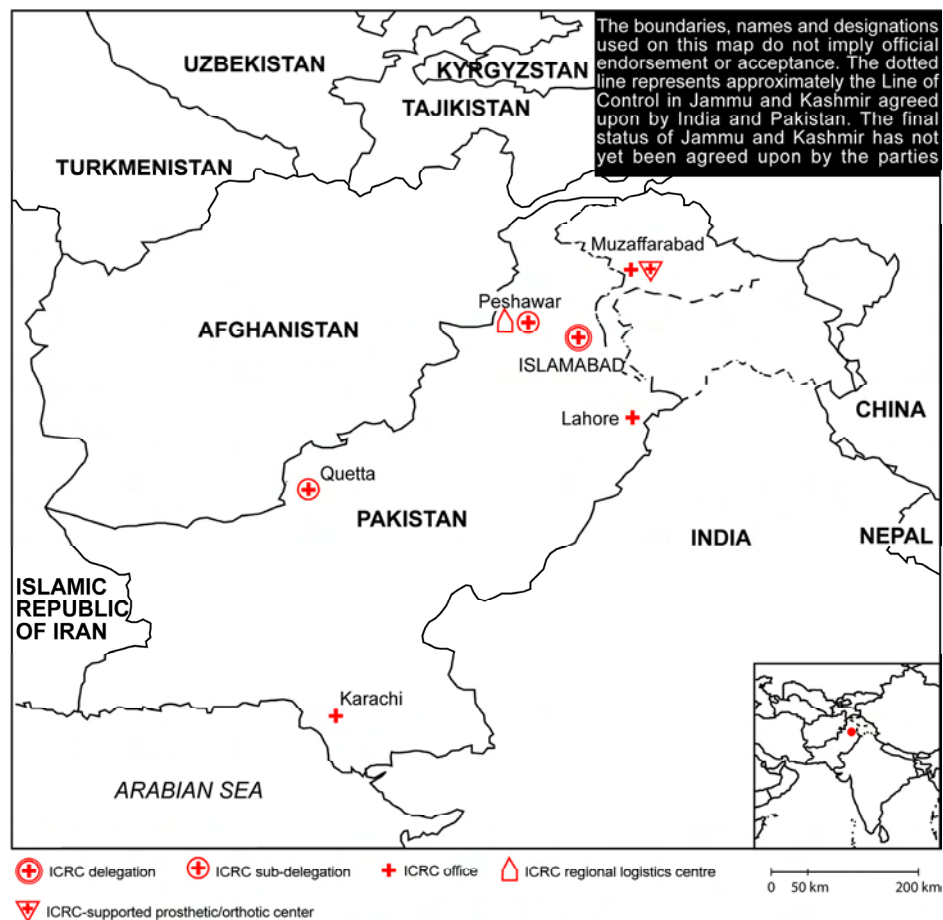
### 1.2.1 The ICRC in Pakistan-administered Kashmir

Among the first international agencies to respond on the ground was the ICRC, which prior to the earthquake already operated in PaK (see Figure 1.2). Within the first week after the disaster the ICRC had begun distributing relief goods such as tents and blankets, evacuating the wounded and helping the survivors to find their families. Only 13 days after the earthquake, the ICRC opened a 100-bed field hospital in Muzaffarabad (ICRC 2006a).

The International Committee of the Red Cross and the International Federation of Red Cross and Red Crescent Societies divided their responsibilities in the affected areas; the International Federation coordinated the operations in the affected areas of the North-West Frontier Province and the ICRC took the command in Pakistan-administered Kashmir. The harsh weather conditions and destroyed roads made it necessary to supply the relief aid with helicopters. The relief activities were coordinated with the Pakistani Red Crescent Society (ICRC 2006b).

In spring 2006 the helicopter operations ended, and the focus shifted to recovery operations. The ICRC started to provide farmers with seeds, fertilizer and tools for agricultural production and helped the authorities to restore public services. Another focus was on the rehabilitation of the rural water systems and the support of Basic Health Units (BHU) in

PaK. In 2007, Pakistani authorities partly took over the medical system that had been re-stored by the ICRC. In 2008, the ICRC entered the final phase of its reconstruction programme in the earthquake affected area of PaK (ICRC 2007, 2008, 2009).



Source: ICRC 2008, design by ZELF evaluation team 2009

Figure 1.2: ICRC activities in Pakistan

### 1.2.2 The GRC in Pakistan-administered Kashmir

Within the first year after the earthquake, the German Red Cross (GRC) supplied 30,000 tarpaulins, 11,112 family tents, 10,000 kerosene lamps, sleeping bags, blankets and 500 kitchen sets to the earthquake-affected people in Pakistan. The GRC also supported the Basic Health Unit in Muzaffarabad, where 14,000 persons were treated, and implemented a Physical Rehabilitation Centre (Box 1.1). GRC experts built 500 latrines and 80 washing rooms, and gave lessons on the importance of hygiene. In cooperation with the ICRC, the GRC was also instrumental for the implementation of the livestock restocking programme, implemented with an overall cost of about three million Euros (DRK 2006). The effect and success of this livestock programme and its contribution to the restoration of local livelihoods forms the topic of this report, which aims at providing insights into the appropriateness of the programme and its attribution to sustainable development.

### Box 1.1: Example for support: The Muzaffarabad Physical Rehabilitation Centre

The Muzaffarabad Physical Rehabilitation Centre (MPRC) is located next to the Combined Military Hospital (CMH) in the centre of Muzaffarabad city.

Prior to the earthquake on October 8<sup>th</sup> 2005, the ICRC conceived the idea of establishing a MPRC facility and signed a Memorandum of Understanding with the AJK Ministry of Health (MoH) to provide and facilitate treatment for disabled persons from Pakistan-administrated Kashmir (PaK). The ICRC planned to support these centres.

This intervention was meant to support victims of the Kashmir conflict between Pakistan and India, which has caused a huge number of deaths and injuries, leaving many with physical disabilities. Prior to the establishment of the MPRC, no services were provided in PaK to treat these disabled persons. Affected people from PaK had to travel to Islamabad or even further to get their treatment, which was hardly affordable and possible for many victims and patients.

However, after the earthquake, the MPRC strategy and its provision of services was adjusted to the needs of injured earthquake victims. In cooperation with the Ministry of Health in PaK, part of its staff being trained in the MPRC facility, the ICRC provided treatment and services to physically disabled earthquake victims in Muzaffarabad.

The cooperation agreement between the ICRC and the Ministry of Health was signed in July 2007. It foresees that until 2013 the ICRC will be in charge of the MPRC facility before handing it over to MoH. Until then, MoH staff is being trained by ICRC medical staff.

The centre has already started its operations, but construction work is still ongoing and the implementation of the management plan is in progress. The professional staff members expand the treatment of various physical disabilities and receive an increasing number of patients.

One of the main activities in the MPRC is the manufacturing of orthopaedic devices to support the mobility of patients. In addition it provides physiotherapist training. The ICRC covers the costs for travel, accommodation, food and the treatment for every patient and even for their companions, when required. There are two dormitories for men and women in the facility, providing 81 beds, a kitchen and a cafeteria.

Besides the treatment for the disabled the MPRC is training local staff to become certified prosthetists and orthotists, and presently 52 persons are working at the facility.

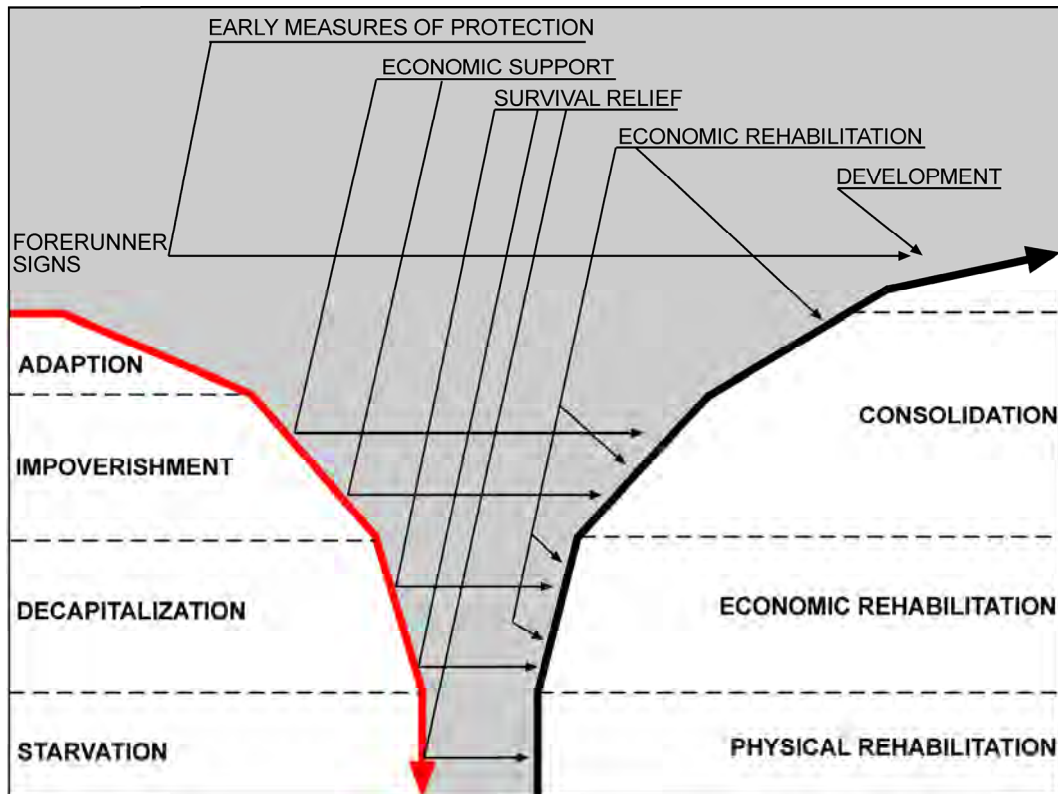
Source: Information gathered during a visit of the evaluation team at the MPRC on March 22, 2009

## 1.3 From relief to development

The GRC/ICRC Livestock Programme in Pakistan-administered Kashmir has been a pioneering experience for both organisations as it was the first time for GRC and the ICRC to donate living animals to people in need. The aim of the project was to give longer-lasting support to the people, especially for their up-bringing of children, and to protect the sustainability of rural livelihoods in the longer term. Moving towards implementing development aid represents an important shift for both the GRC and the ICRC as both have traditionally focused on rescue and relief operations.

The Economic Security Unit (EcoSec) of the ICRC was responsible for the operation. The aim of the Economic Security Unit is to ensure the ability of victims in conflict or crisis situations to regain economic security at the household level. The staffs of the Economic

Security Unit consist of experts in different fields such as nutrition, agronomy, veterinary science, and economics (ICRC 2000).



Source: ICRC 2000

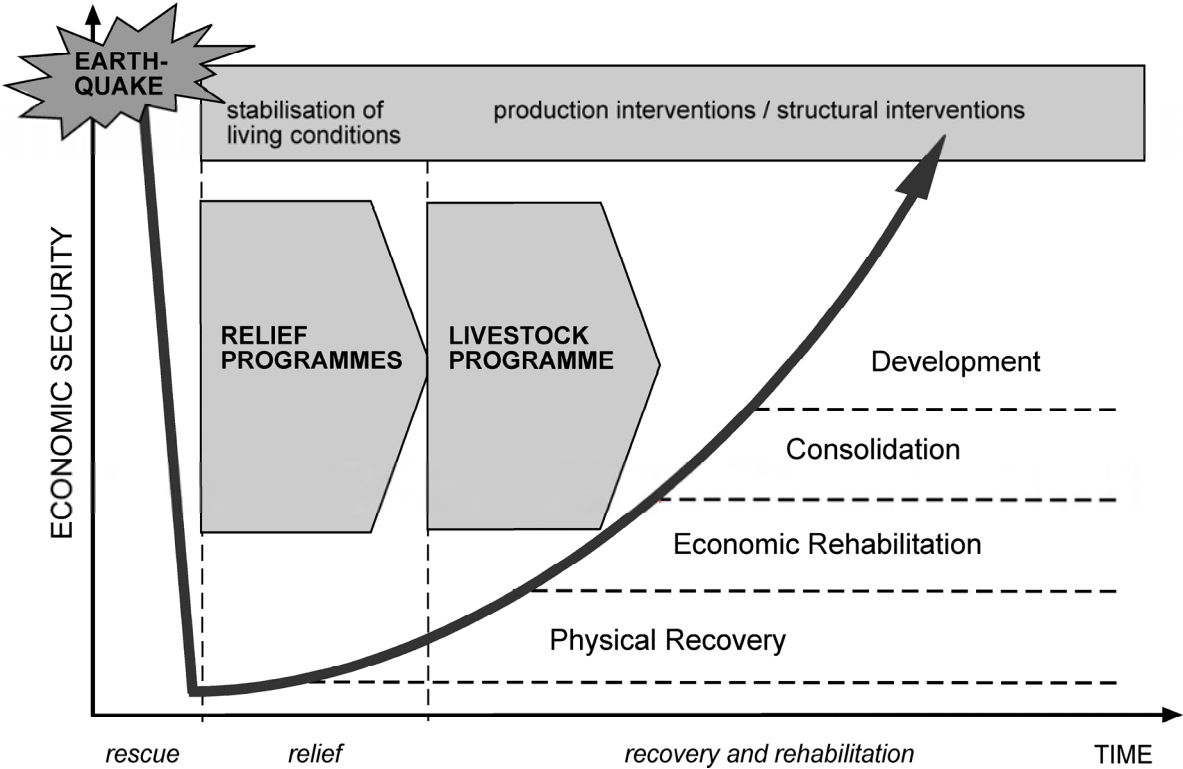
Figure 1.3: Crisis process scheme and types of intervention

Figure 1.3 summarises the gradual evolvement of a crisis and the approaches followed to address its effects in model form. Each crisis is announced by forerunner signs, as demonstrated in the crisis model scenario. When a crisis is detected, early measures of protection should be taken to avoid a crisis. This includes, for instance, encouraging relevant authorities to act on behalf of affected populations. In this phase, direct assistance is usually not necessary.

If people and authorities are not able to cope with the crisis by themselves, economic support is needed. In the phases of impoverishment and decapitalisation the households lose their economic self-sufficiency and survival relief operations are often the only solution. The mandate of the Economic Security Unit in such situations is to help the population to recover and regain their self-sufficiency. Economic rehabilitation programmes try to restore the means of production. During the consolidation phase, it is the aim to link economic rehabilitation with development. Development programmes are important to reduce the structural vulnerability to prevent further crisis (ICRC 2000).

In case of an earthquake, however, there is no gradual build-up of a crisis and pre-emptive measures cannot be taken. Everything, literally, happens in a matter of a minute (Figure

1.4) and different approaches are to be followed. The earthquake in PaK represented such a case where a new approach was implemented. After extensive assessments by the ICRC Economic Security Unit in the earthquake affected areas of Muzaffarabad District it was decided to engage in a livestock restocking project that aimed to link relief and development (ICRC 2005).



Source: Design by ZELF evaluation team 2009

Figure 1.4: Intervention scheme of GRC/ICRC Livestock Project

The project implementation began when the relief phase after the devastating earthquake had just ended. Giving people milking animals instead of milk rations was seen as an effective measure for a long lasting enhancement to the regional economy and support rural livelihoods. The overall goal of the GRC/ICRC Livestock Programme thus was to make relief aid sustainable. Besides the donation of the cows, the GRC and the ICRC invested in the construction of basic animal health care services at the village level and the improvement of local breeding services in the project area. It was hoped that through the donation of cows, living conditions would stabilise. Owning livestock should bring economic rehabilitation to the beneficiary and may lead towards a living condition equal to or even above their pre-earthquake status. The distribution of the cows resembled a production intervention on the household level, and the implementation of the veterinary and breeding services aim for structural improvements.

## 1.4 Summary of the GRC/ICRC project

During a fact-finding mission in the immediate aftermath of the earthquake it was found that the loss of livestock in the affected area highly threatened the nutritional security of inhabitants. Especially for children the situation was serious, because one of the main elements of their daily diet - milk - was no longer available to them. A donation of lactating cows was thus considered the best option to support the affected populations.

The GRC/ICRC project thereby intervened with three main packages:

- Restocking of selected beneficiary households with dairy cows
- Training and equipping Livestock First Aid Workers (LFAWs)
- Training and equipping Artificial Insemination Technicians (AITs)

Restocking of cows in their early lactating period aimed at a sustainable improvement of the nutritional status of the beneficiaries. The intention of the GRC/ICRC was to provide animals suited to the area and which can give a reasonable amount of milk. Besides the direct impact on the nutritional status of the people, the GRC/ICRC hoped to strengthen the economic security of the beneficiaries. The idea was to improve the household economy because people would not have to buy milk anymore and might even be able to sell excess milk or other dairy products.

The attendant structural intervention of establishing veterinary and breeding services through LFAWs and AITs was aimed at the future development of the area. The training of LFAWs and AITs was implemented to build capacity and ensure medical treatment for the cows through these workers. Furthermore, this education gave selected people the chance to start a small self-sustaining business (ICRC 2007b: 4).

The project was ambitious and internal debates were held as to how the project steps were to be implemented, if at all. After the final decision to fund and implement the project, two major steps had to be taken: finding, purchasing, and transporting a sufficient number of cows and calves to the project areas, and selecting the project beneficiaries.

The first step proved to be difficult, as most of the livestock in the project area had perished in the earthquake. A market analysis was conducted and it was decided to obtain cows from the lowlands in the Punjab, where a sufficient number of animals were available. The choice of breeds to be used for restocking was made by veterinarians of the ICRC. The main selection criteria were the amount of milk an animal was able to give and the size of the animal. The whole process of purchasing the animals from livestock markets in the Punjab and transporting them to the distribution point in Pattika, a village located north-east of Muzaffarabad, was thereby outsourced to a contractor.

Once the cows reached their destination in Pattika, they were checked and received veterinary treatment as necessary. Furthermore, milk production was controlled so that no dry animals were distributed to the beneficiaries.

Parallel to the process cow purchasing and transporting, the beneficiary selection process was carried out. This proved very important, as the number of cows obtained for distribution was not sufficient to serve each deserving household. Thus, right from the beginning, the selection process needed to be transparent and with as much integration of villagers as possible in order to select the neediest households. The exact procedure of the beneficiary selection process is explained in Section 1.5.1.

The whole process took time, because all the villages had to be physically visited by the GRC/ICRC field staff. In the end, a list of beneficiaries had been established and the first distribution of the cows began in August 2006, about one year after the earthquake (ICRC 2007b: 6-7).

## 1.5 Implementation of the livestock package - challenges and achievements

*"Due to the heavy losses of livestock during the earthquake of October 2005, the livelihoods of hundreds of thousands of people have been put at risk. The affected population in the mountainous areas of PaK depend heavily on their livestock for agricultural production"* (ICRC 2006a: 4).

The above citation exemplifies the fact that livestock plays a very important role in the economy of a household in PaK. However, the implementation of the GRC/ICRC livestock package was exposed to many challenges. These included the fair and transparent selection of beneficiaries and the logistics of cow distribution.

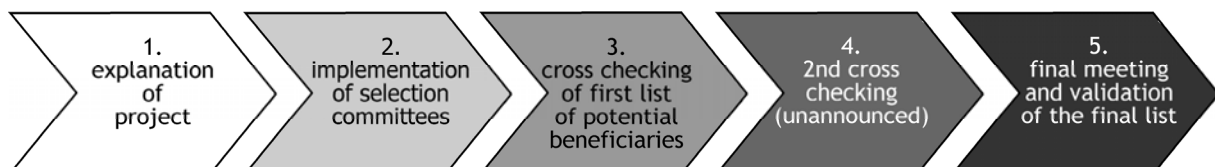
### 1.5.1 The beneficiary selection process

The beneficiary-selection process was accomplished in five steps (Figure 1.5).

1. In the first step, a team of GRC/ICRC project staff visited each village in the project area and collected basic socio-economic data. During this first visit a group meeting took place where the project ideas were introduced. A second meeting was scheduled within a few days, to which the entire village community was invited.
2. The second step was to facilitate the formation of a village based beneficiary selection committee which should comprise of all social groups in a particular village. The communities accomplished this task over a few days and publicly announced the membership so that everyone had the chance to intervene. This newly estab-

lished livestock committee was given the task of selecting beneficiaries in their village, whereby strict criteria had to be followed. Beneficiaries needed to fulfil the following requirements in order to be considered to receive a cow:

- a. "Families who lost large animals due to earthquake-related reasons; had children under 12 years of age; had the means to care for the animals (e.g. shelter, source of fodder and an adult female - customary caretakers of animals); and could not restock on their own.
  - b. Families who never owned large animals because they could not afford to were included if they had many children under 12 and fulfilled the rest of the criteria" (ICRC 2007a: 6).
3. The selection committee furnished a list of potential beneficiaries according to these criteria. This list was then crosschecked by GRC/ICRC project staff in order to make sure no flaws occurred and only deserving households were selected. Households on the list were interviewed and the whole list was read out during a community meeting. On this occasion everyone again had the chance to intervene and protest.
  4. After this first crosscheck the updated list was checked again, but this time the implementation teams of the GRC/ICRC visited each household, unannounced, to verify that the nominees met the established criteria.
  5. In the final step, the finalised list of beneficiaries was again read out to the village community. One last time people had the opportunity to intervene, and the final village beneficiary lists were established, serving as the basis for distribution.



Source: ICRC 2007b, design by ZELF team 2009

Figure 1.5: Five steps of the beneficiary selection process

This selection procedure can be judged as being as transparent as circumstances allowed. Although it can hardly be ruled out that affluent households managed to get placed on the distribution list by virtue of their powerful positions, the applied procedure minimised that danger to the largest extent possible. However, given that only a rather limited number of households in each village were included as beneficiaries, some tension occurring inside communities during the selection process was not to be avoided.

After final selection, the animals had to be distributed from the newly established ranch in Pattika (cf. Fig. 1.7). To guarantee a fair distribution of the cows a lottery was held. All cows were assigned a unique number, which were then drawn by beneficiaries. This procedure guaranteed a distribution by chance, as not all cows were of the same quality. Along with the cow, every beneficiary received an owner certificate to be able to prove that the



animal legally belonged to them. Back in their village, the beneficiaries had to take part in a special livestock training held by the GRC/ICRC. Later, this procedure was changed because the project staff recognised that it would be better to complete the training before the distribution. The training focused on basic animal health care, proper nutrition and the importance of a good, clean shelter for the cow and its calf. After successfully completing the training, every participant was given a training booklet with information provided in written and picture formats to make sure that illiterate people were also able to understand the information provided in the booklet.

### 1.5.2 Problems of transportation and non-adapted animals

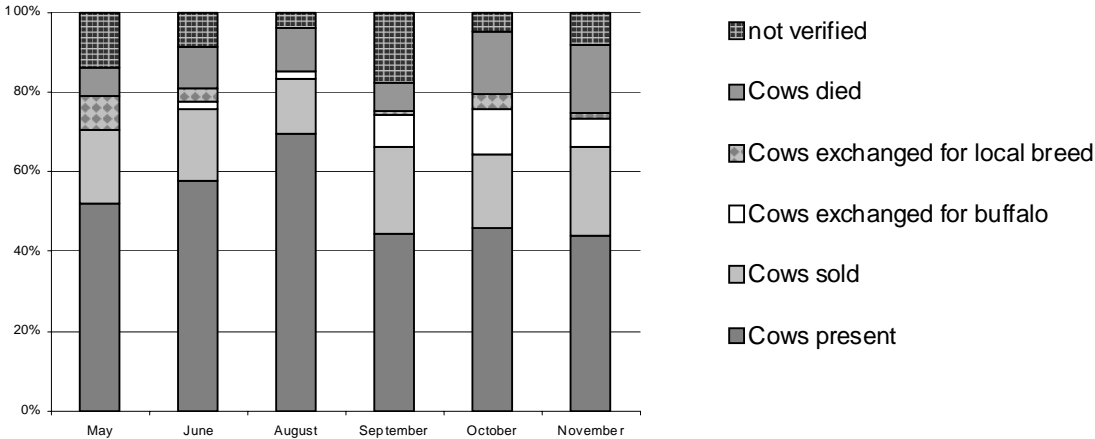
The newly built livestock facility in Pattika was perceived an ideal place to gather the animals. In Pattika, the GRC/ICRC veterinarians were able to check the cows for their overall health status after the strenuous transport from the *Punjab*, along with their milk production. To secure the animals from injuries during transport, special trucks with even, wooden floors were used instead of the usual trucks with their slightly concave and slippery metal floors.

Apart from the logistical challenges of acquisition, transport and veterinary healthcare, there was the additional problem that the *Punjabi* cows selected for distribution were not well adapted to the mountainous and rugged terrain of the project area. Villagers reported different problems arising from this fact. For many, the non-adaptation of the animals became obvious right after they have received the cow in Pattika. There were basically two possibilities for the beneficiaries to bring their new cow to their village: either transportation with jeeps or walking, with both options bearing certain risks. Transport by jeep was very risky because of road conditions, with some beneficiaries' cows falling off the jeep to their deaths along the way. However, even amongst those who walked with their animals, there were accidents. On the steep and narrow footpaths some animals slipped and fell or were simply unable to continue all of the way to the villagers' home. Although these were unlucky and exceptional cases, it nevertheless shows that the adaptability of lowland cows in mountainous areas is problematic.

The timing of the cow distribution also has to be taken in account. Cows were transported and distributed between May and November. However, the later in the year they were distributed, the harder it was for beneficiaries to prepare them for the winter season (Figure 1.6). During interviews many people mentioned the time of distribution as a reason for the death of their cows early after distribution (cf. Chapter 4).

Other problems with the *Punjabi* cows were reported by respondents. Unlike the cows from local breeds the GRC/ICRC cows were not able to graze freely outside the shelter because of the risk of accidents and the possibility of their falling off the terrace. This fact caused major constraints for many beneficiaries. Before the earthquake the animals were brought to grazing areas located some distance away from the village, and an entire household was

engaged in seasonal migration. In the fall and spring animals were taken to grazing land inside or close to the village. Both these practices cannot be upheld with the newly introduced cows from the programme. Today, the cows are living throughout the year in shelters near the house and household members have to bring both fodder and water to the animal. Summer pastures are not really used anymore, although sometimes people go there to cut the grass and bring it down as fodder. Before the earthquake such investment was only necessary for buffaloes, but for beneficiary household's livestock now needs intense attention (see also Section 4.1.3).



Source: Village survey by ZELF evaluation team 2009, N = 35

Figure 1.6: Variations in cow presence among villages according to month of distribution

Another problem often mentioned by respondents is that bulls from local breeds have difficulties in mating with the *Punjabi* cows. The *Punjabi* cows are simply too tall, sometimes resulting in the bull getting seriously injured, e.g. with a broken leg. However, this problem is partly addressed by the introduction of artificial insemination through the GRC/ICRC project.

Despite these concerns, however, the overall perception of the project is very positive among beneficiaries. People are grateful for the help they have received, and even if a higher milk production could be possible if the nutrition of the cow was better, each litre of milk is appreciated. As one respondent in the village of Rialli said: *"The cow is the beauty of our house. It shows that we are really alive and not a burden to the village. I could not live one minute anymore without my cow."* (Woman from Rialli, interviewed on March 22, 2009). Statements like this show that the cow is perceived as a source of development and improvement. It often is seen as a base on which a new future can be built after the devastating catastrophe.

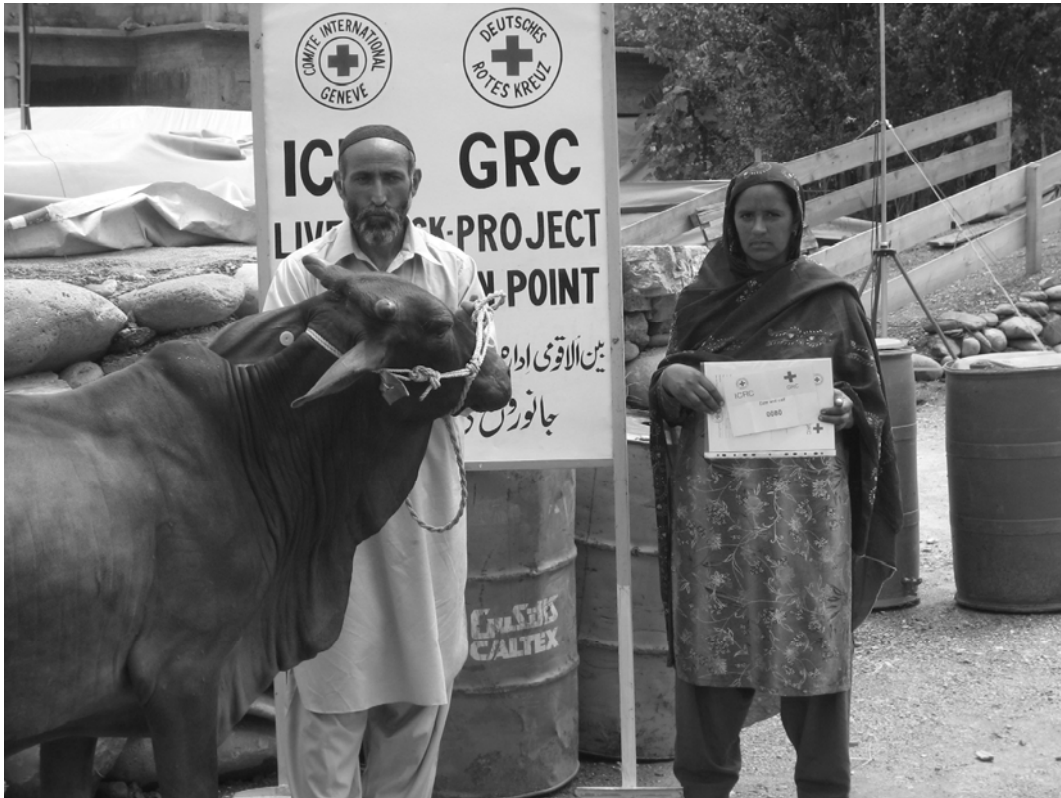


Photo: GRC, March 2006

Figure 1.7: Cow distribution and issuing of owner-certificate

## 1.6 The rationale of evaluating the livestock project

The GRC/ICRC Livestock Programme was a new experience for the implementing agencies and is indicative of a shift in focus by extending it from relief to development activities. This shift was internally contested, and it was perceived that an independent third party evaluation would be important in order to assess the success of the project vis-à-vis its goals.

The main questions of interest for the GRC/ICRC pertained to the overall contribution of the project to the livelihoods and economic security of the beneficiaries, and if the project is replicable in similar contexts of responding to natural disasters. These issues were looked at for the evaluation, along with a focus on the new experiences gained during project implementation and the impact it had on institutional learning.

Two main objectives guided the evaluation. The first objective was to assess the impact on the household economy of project beneficiaries. The second objective was related to the relevance, effectiveness and efficiency of the technical measures of the programme.

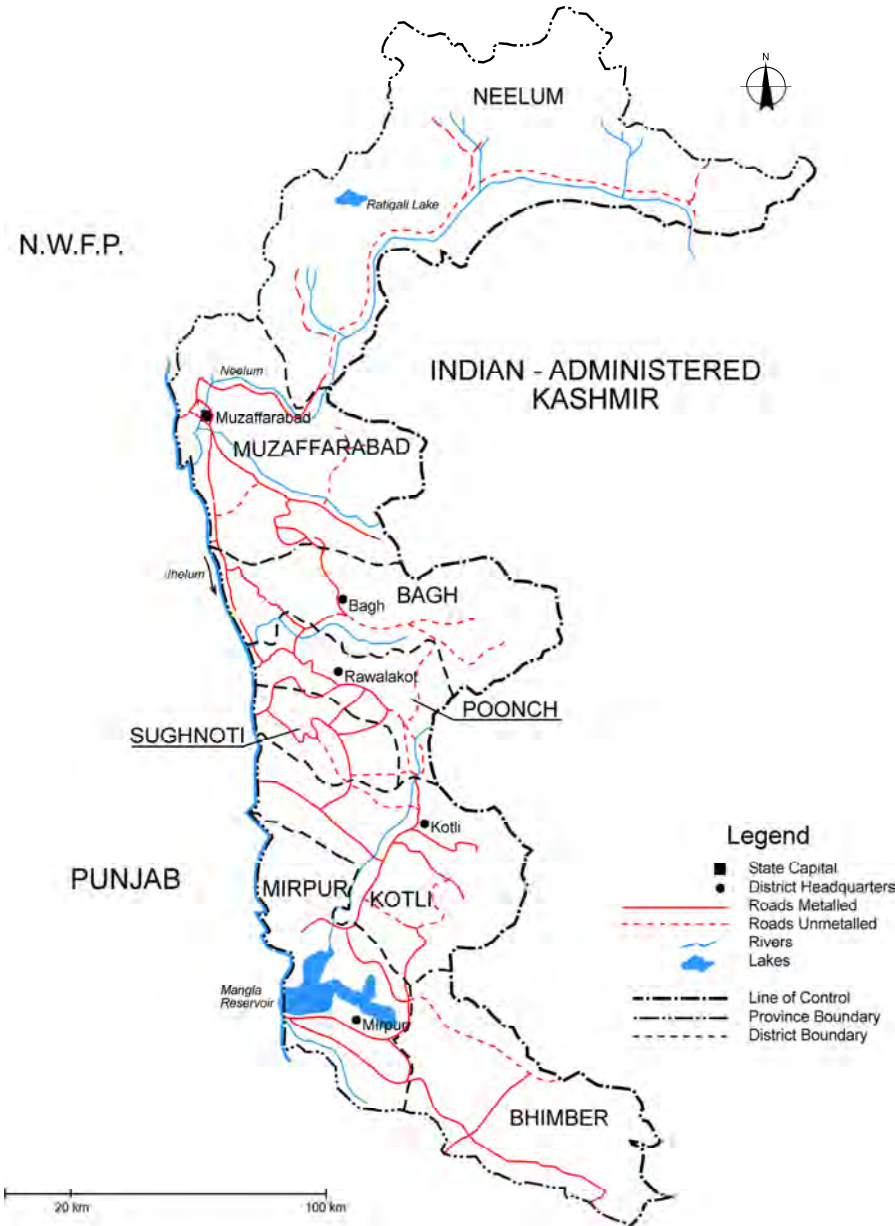
- To what extent are the Livestock Programme objectives in line with local needs and priorities?
- To what extent has the Programme effectively achieved to improve household economic security, and how efficient and sustainable were the technical measures?

These main objectives were addressed by a specific methodology outlined in Chapter 3 of this report, and the findings of the evaluation are presented in detail in Chapter 4. Before that, however, a brief introduction to the context of Pakistan-administered Kashmir and to the specific characteristics of the project area is in order.

# Chapter 2 - Context: Introduction to Pakistan-administered Kashmir

The overview of the project's embeddedness into a socio-political, constitutional, economic and historical environment provides some insight into the frame conditions under which the livestock project was implemented. The contextual circumstances are relevant for the estimation of the success or the failure of relief and development programmes.

## 2.1 General facts for Pakistan-administered Kashmir

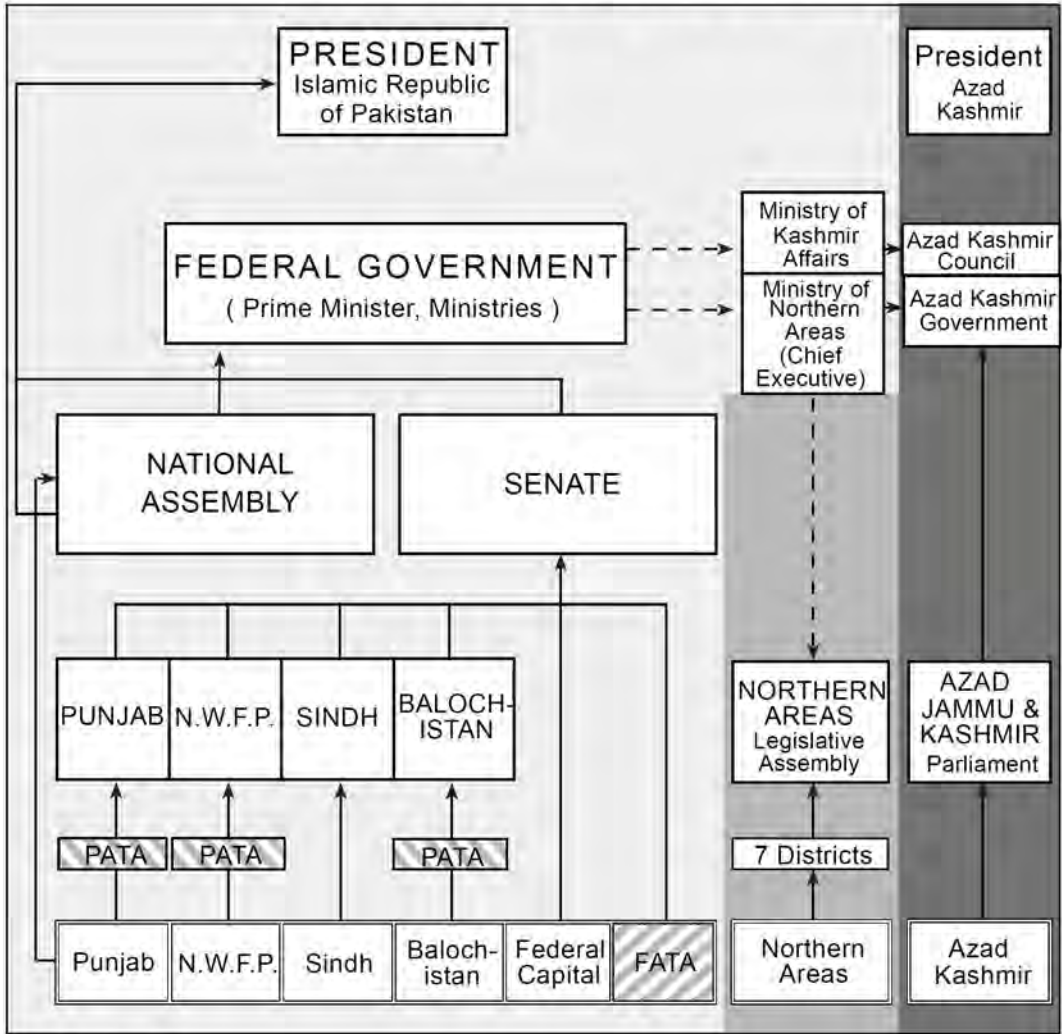


Source: Skyscrapercity.com, assessed May 2009, design by ZELF evaluation team 2009

Figure 2.1: Map of Pakistan administered Kashmir

**General:** According to the population census from 1998, Pakistan-administered Kashmir had a population of 2.973 million, and in 2008 the population is estimated to expand to 3.682 million. The population density is 277 persons per square kilometre, with close to 90 percent of the people living in rural sites. The literacy rate is estimated at 64 percent, which is above the national average (AJK Planning and Development Department 2008).

**History:** The conflict in Kashmir began with the retreat of the British from India. The former British-India was divided into two states, India and Pakistan. Based on the census of 1941 the Districts with a majority of Muslims were expected to join Pakistan, and the Districts with a minority of Muslims were expected to stay in the Indian Union. In fact the majority of the Kashmiris had Muslim beliefs, but the ruler of Kashmir, Maharaja Hari Singh belonged to a Hindu Dynasty. Hari Singh waited a long time until he decided to join the Indian Union. The decision caused an uprising of the Muslims which ended in the first war between India and Pakistan in 1947/48. The war led to the division of Kashmir. Since then two other wars have been fought between India and Pakistan over Kashmir (Kreutzmann 2008).



Source: Kreutzmann 2008

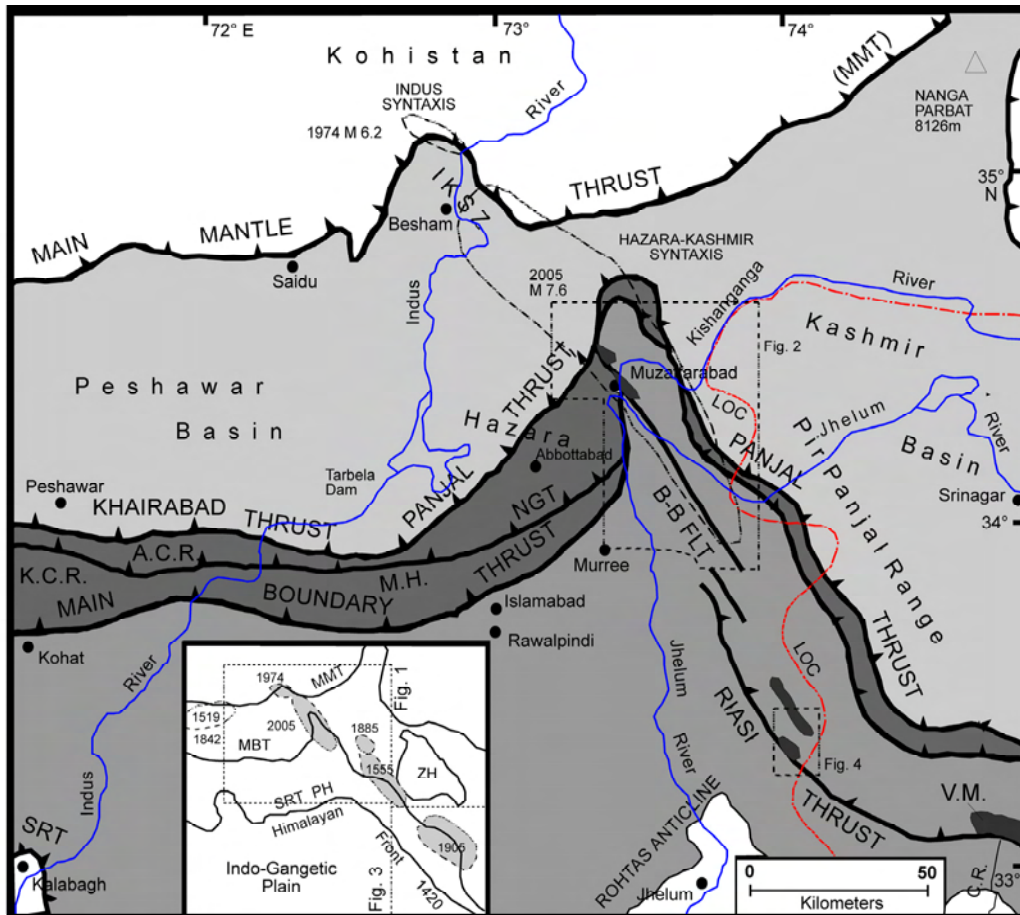
Figure 2.2: Constitutional setup of Pakistan

**Constitutional setup:** Pakistan-administered Kashmir has a parliamentary form of Government, with the Constitutional Head of the State being the President. The executive Chief of Pakistan-Administered Kashmir is the Prime Minister who is supported by a Council of Ministers. PaK has its own legislative assembly apart from Pakistan. The legislative assembly comprises 41 directly and 8 indirectly elected members. Even Pakistan recognizes PaK as a partly sovereign state. Still, major positions inside the political system of PaK are filled by the Pakistani Government.

**Administrative Divisions :** Pakistan-administered Kashmir is divided into three divisions: Muzaffarabad-, Mirpur- and Poonch. These divisions are divided into nine administrative districts. The Muzaffarabad Division consists out of Muzaffarabad- and Neelum District, the Mirpur Division includes the districts of Mirpur, Kotli and Bhimber, and the Poonch Division comprises of Poonch-, Rawalkot-, Bagh- and Sudhnuti District. The subsequent administrative level is the Union Council (UC) (AJK Planning and Development Department 2008).

**Seismography:** The frequently occurring earthquakes in northern Pakistan and the neighbouring parts of India and Afghanistan are direct results of the Indian subcontinent moving northward and colliding with the Eurasian continent. The highest mountain peaks of the world located in the Himalaya, Karakoram, Pamir and Hindu Kush are representatives of a comparatively young geological folding caused by the collision of the two continental plates during the Tertiary Age. The compressional motion between the two colliding plates has caused a suite of major thrust faults (see Figure 2.3). These thrusts include the Main Frontal thrust, the Main Central thrust, the Main Boundary thrust and the Main Mantle thrust, and are situated across the northern foothills of the Indo-Pakistan subcontinent. The modern active faults stem from a number of individual fault traces. The rugged mountainous terrain makes it difficult to identify and map these individual thrust faults, but the overall tectonic style is clear in the area of the earthquake. The thrust faulting is produced by the north- and northeast-directed compression. Figure 2.3 shows the 'major tectonic units, large historical earthquakes, the Indus-Kohistan Seismic Zone, and possible active fault extensions of the Balakot-Bagh fault to the southeast, including the Riasi thrust' in the northwest Himalaya region (Hussain, Yeats, MonaLisa 2009: 316).

**Agro-climatic conditions:** The climate is sub-tropical. The average annual rainfall ranges around 1,300mm. The monsoonal season lasts from July to mid-September. The winters are cold and the summers are hot. The seasonal snowline varies between 1,200 meters in winters and 3,300 meters in summers (AJK Planning and Development Department 2008). The concentration of rains within the monsoonal allows one crop per year. Double-cropping depends mainly on supplementary field irrigation.



Source: Hussain, Yeats, Monalisa 2009: 316, design by ZELF evaluation team 2009

Figure 2.3: Thrust faults of the northwest Himalaya

**Topographical challenges:** Pakistan-administered Kashmir lies in the north-eastern part of Pakistan. It borders the Punjab in the south, the Northwest Frontier Province in the west, and the Northern Areas in the north and Indian-administered Kashmir in the east. Pakistan-administered Kashmir comprises an area of about 13,297 square kilometres. The area is mainly hilly and mountainous with valleys and stretches of plains. The elevation ranges from 360 meters in the south to 6,325 meters above sea level in the north. The three main rivers in PaK are Jhelum, Neelum and Poonch (AJK Planning and Development Department 2008). Deeply-incised river valleys are characteristic for the location of settlements and village lands. Steep slopes, narrow terraced fields, difficult access and scattered houses are prominent features in a mountainous environment that provides access to forests and natural pastures above the permanent settled area.

**Economic activities:** The majority of the rural population in PaK depends on forestry, livestock and agriculture for their livelihood. An estimated 84 percent of the households own agricultural land. The landholdings are generally very small; the average land-holding ranges between one to two acres per family. The major crops in the area are maize, wheat and rice. The average income generated through agriculture and livestock ranges between 30 to 40 percent of the total household earnings (AJK Planning and Development Department 2008).



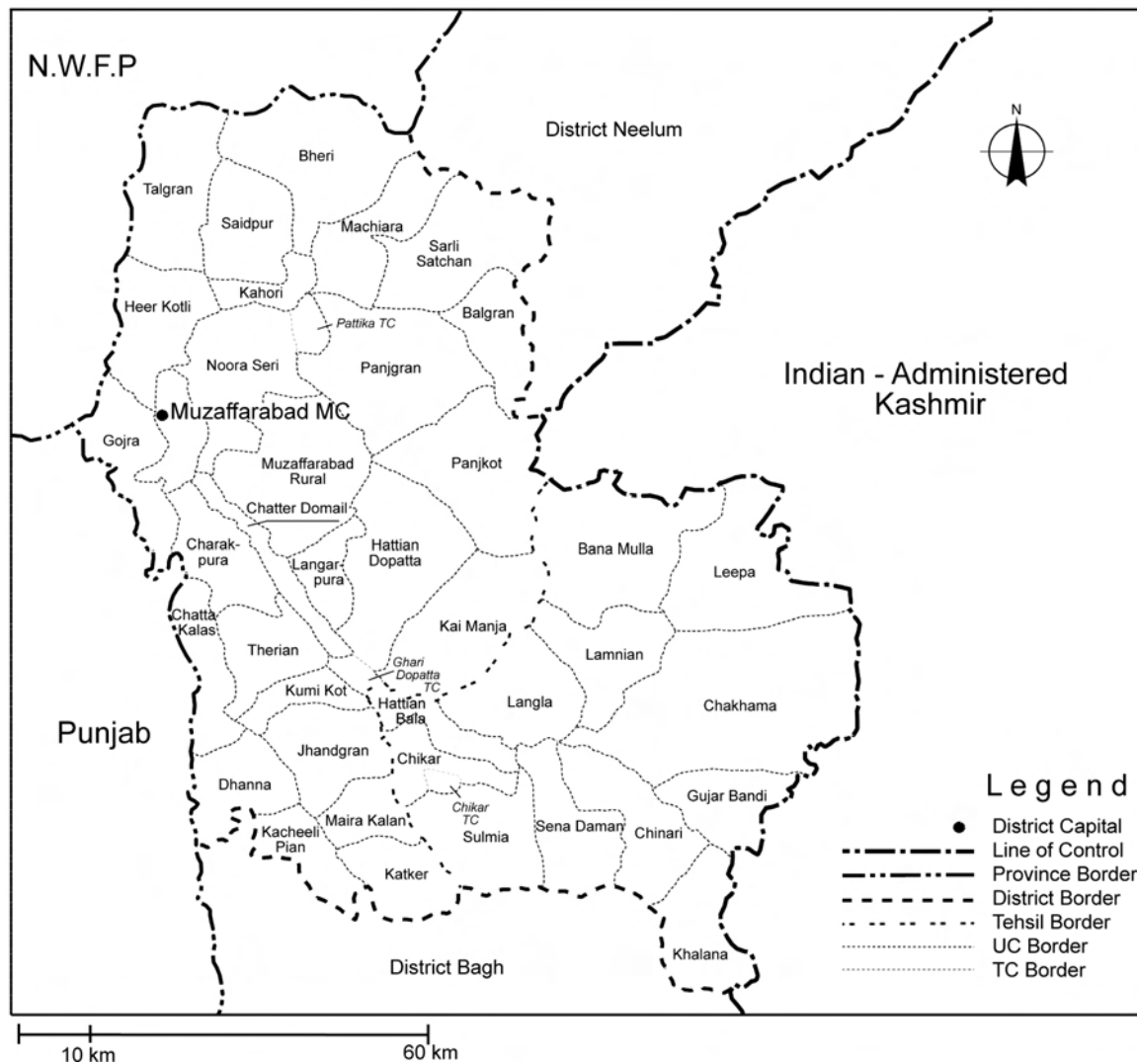
ment 2008). A majority of the people rely on off-farm income and remittances from other family members. For instance, people work as government servants or as daily labourers or because of the limited employment possibilities in the area, many male household members have migrated to work outside of PaK. They work in the big cities in Pakistan or outside the country as migrant-workers in the Gulf States or other parts of the world.

## 2.2 Introduction to the project area

The ICRC project was implemented in five Union Councils of the Muzaffarabad District (Talgran, Saidpur, Kahori, Noora Seri, and Panjkot). The district is located around the capital of PaK, Muzaffarabad, and borders the Neelum District in the North and Bagh District in the South. The western border is with the NWFP and Punjab and in the East the line of control constitutes the factual border to India (Figure 2.4).

Muzaffarabad District was most severely affected by the earthquake and was accordingly selected as the project area. According to different sources 30-90 percent of the livestock in this region died due to the earthquake (ICRC 2006a: 4). "*The union councils in the Neelum valley near to the epicentre were hardest hit during the earthquake and were economically poorer before the earthquake in comparison to the union councils in Jhelum valley*" (ICRC 2006a: 5). The quotation underpins why five Union Councils of the Neelum valley were chosen to receive aid from this project: Kahori, Panjkot, Nura Seri, Saidpur and Talgran Union Councils. The project area of the five Union Councils is inhabited by approximately 13,306 households, and the objective was to assist 15-20 percent of these households (ICRC 2006a: 5).

Muzaffarabad District is a rural and mountainous area. Although there are some bigger settlements such as Kahori, Pattika or the District Capital Muzaffarabad as the urban centre in the region, most of the inhabitants live in small and scattered hamlets. Nevertheless, the bigger settlements play an important role as marketing centres for trade and the provision of basic consumer goods. In addition Muzaffarabad City provides opportunities for off-farm labour such as entrepreneurship, trade, government services or wage labour.



Source: Topographical base map Muzaffarabad, design by ZELF evaluation team 2009

Figure 2.4: District Muzaffarabad

The GRC/ICRC project assisted 110 villages in the Muzaffarabad District. These villages follow a very specific settlement pattern. The houses are scattered and dispersed on hilly slopes of substantial altitudinal range. Often settlements are even spread over watersheds. Settlement concentrations are an exception. Consequently, accessibility is affected and rarely achieved for all farms. It is the rule that infrastructure assets, such as governmental veterinary support, are often remotely located for most of the consumer households.

Most of the people in the project area are farmers belonging to various endogamous social groups locally referred to as *biradari* (brotherhood). Each village usually comprises of a number of those *biradaris*, the social structure of a settlement is perceived as a group of biradaris. Farming constitutes the main livelihood activity for local dwellers, and the output from the fields is primarily augmenting the household's subsistence. Only a few households are able to generate surplus products and are in a position to sell their crops either inside their village or to market places. The agricultural fields are usually situated very

close to the dwelling of a household, and only summer grazing areas are further away from a household or a village.

While in agriculture and animal husbandry division of labour between household members is common, only male household members take care of monetary income generated off-farm. The most common work is daily labour in Muzaffarabad or other central places such as Pattika. Some people own neighbourhood shops inside the villages and only a few are employed on a more regular basis, for example as teachers or as government servants in Muzaffarabad.

It is striking that before the earthquake almost every family had one male member working in a big city in Pakistan, mainly Karachi, Islamabad, Rawalpindi or Lahore, or in the Gulf States. Remittances formed a very important source of income for a vast majority of villagers in the District. Due to the catastrophe, however, many of these people working outside the village returned home in order to help their families and have remained in Kashmir. According to interviewees, remittances today continue to form an important ingredient to local livelihoods but the overall number of migrant workers appears to have decreased significantly after the earthquake.

An important factor in the aftermath of the earthquake is the compensation money people received from the Pakistan government. Although this constitutes a one time payment, it plays a significant role even three years after the earthquake. For a destroyed house, people received 175,000 Rupees paid in three instalments to which were attached strict conditions how and where the abode had to be rebuilt. In addition, affected households received 100,000 Rupees from the government as compensation for each family member lost in the earthquake. In some cases people continue to depend on the remainders of this compensation money even today. For example a mason in the village of Batlian stated: *"I do only work when I really want to. We received 875,000 Rupees from the government, and that money is still sufficient for me and my family to cover our needs"* (Interview on March 20, 2009).

As indicated above, even smaller villages accommodate different *biradaris* which sometimes also form different language groups. Nonetheless people tend to help each other in times of need. Although the coherence of the community is not equally strong in every village, it is difficult to find people who are not part of a support structure when confronted and challenged with survival threats. One respondent in the village of Madaar explained such modes of self-help as follows: *"When you need help, at first you will ask your relatives. If they are not able to help, you try to find assistance from the members of your biradari and if still no one is able to help, you surely find someone to help from another group in the village"* (farmer in Madaar, interviewed on March 31, 2009). This indicates that social security is ensured when e.g. accidents occur, but this social security system cannot cope with an extreme catastrophic event like the earthquake. If it comes to minor incidents such as a fire or a sickness of the main bread-winner in a household, peo-

ple in the community try to help according to their capabilities, for example by helping reconstruct housing, or donating money or building materials. In the village of Batlian people established a system to cope with the often expensive rituals of a funeral. If somebody dies, all families of the village donate some money to the affected family, so they are able to bury their relative without falling into debt. Similar systems can be found in many other villages as well.

In the case of crime and conflict, there are village institutions (*jirga*) which convene to address problems and find mutually acceptable solutions. These *jirgas* are usually comprised of the elders of a village. The principle of *jirga* expects of all concerned parties to come to terms and to agree upon a consensual solution.

As indicated the villages show certain similarities, for example the agricultural alignment, as well as important differences. Therefore a methodology had to be developed which takes these differences into consideration for the examination of the impact of the live-stock project.



Photo: Kreutzmann, March 2009

Figure 2.5: Dispersed settlements in the project area

# Chapter 3 - Methodology

The GRC/ICRC Livestock programme was implemented with the goal of improving the economic security of the most vulnerable, earthquake-affected households in the Muzaffarabad District of PaK. The means for such improvement was a restocking of selected beneficiary households' livestock with one dairy cow and a calf as a productive intervention to strengthen the asset base of beneficiary households. In addition, a structural intervention that aimed at improving veterinary and breeding services in the project area was implemented. This referred to the establishment of livestock-related services embodied in the new profession of Livestock First Aid Workers (LFAWs), who ensure the health of livestock, and the Artificial Insemination Technicians (AITs), who improve the reproductive performance of these animals (ICRC 2007b: 3).

The effects of these interventions on household economic security and the general relevance, effectiveness and efficiency of the interventions were assessed and evaluated on site between March 15 and April 4, 2009 by a group of eight Masters Students in the Geographical Development Department of Freie Universität in Berlin. In order to address the objectives of the evaluation as stated in Section 1.6, the team developed a three-tiered methodological approach based on semi-structured interviews and focus groups.

## 3.1 Three-Tiered Methodological Approach

To investigate the project's impact on the economic security of earthquake-affected households in PaK, the evaluation approach aimed to analyse the Livestock programme from three perspectives: at the village level, at the household level, and from the perspective of experts, such as LFAWs, AITs, Government officials, and GRC/ICRC project staff. The multi-perspective approach tried to safeguard and to consider the views of all relevant project stakeholders.

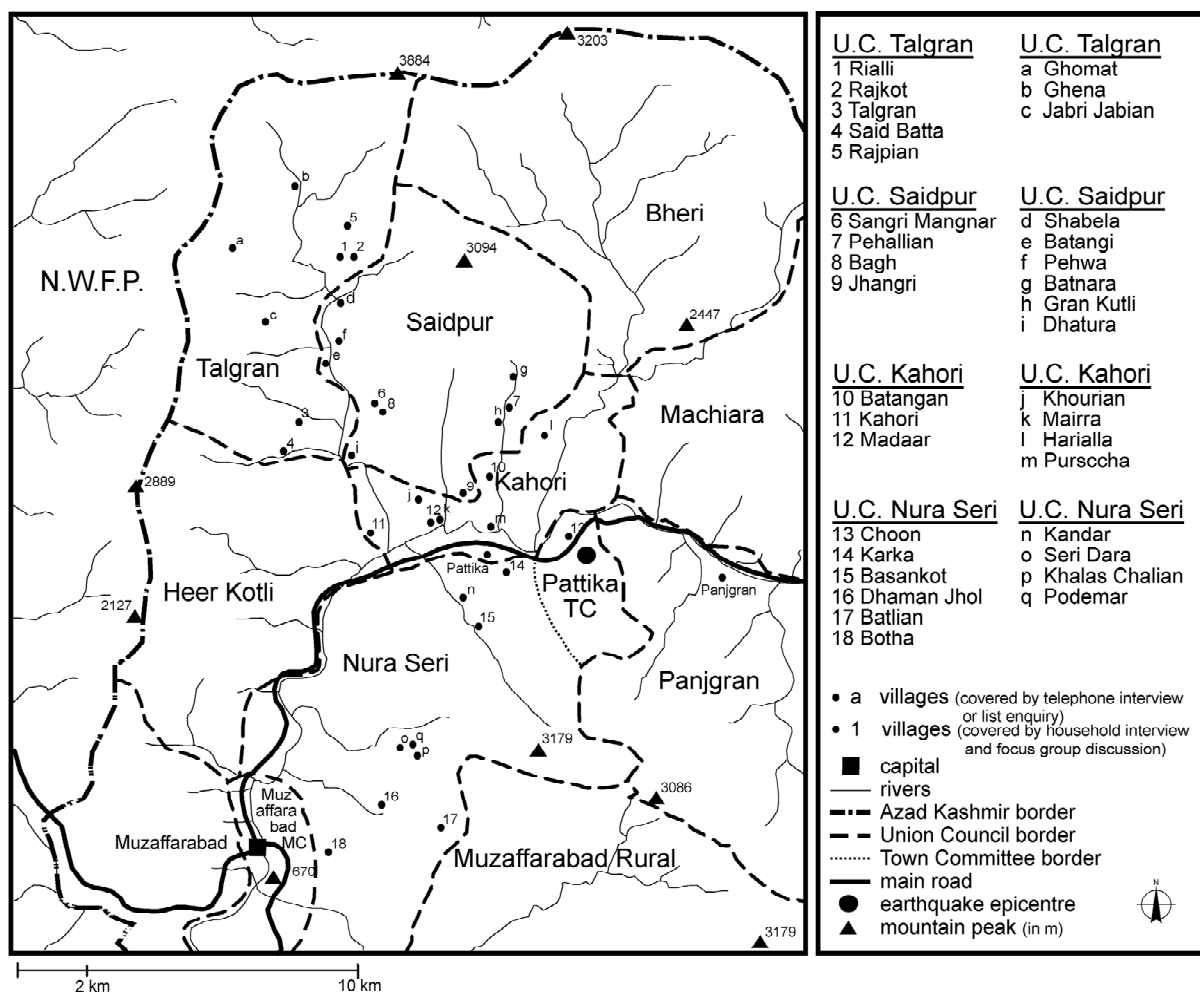
Based on an initial examination of available project documents provided by the GRC/ICRC to prepare the team members for the evaluation, this approach was considered appropriate for assessing the project's effects and its success in meeting the objectives of the evaluation.

### 3.1.1 Village Level

In a first step, general information about each study village was collected on a relatively high level of aggregation. At this level of investigation the ecology, economy and social environment in which a beneficiary is embedded were scrutinised. A community assessment of ecological properties such as altitude, soil fertility and the ecological conditions of crop farming formed the basis for a qualification and grouping of settlements. Further,

socio-economic factors in a village were assessed in community focus group discussions. These referred to farming systems, available assets, relative importance of farming and wage labour, the importance of animal husbandry, access to markets, education, health systems, development aid, social cohesion and the ability to organise communal support. The focus group discussions at the village level followed an interview guideline as provided in Annex A.

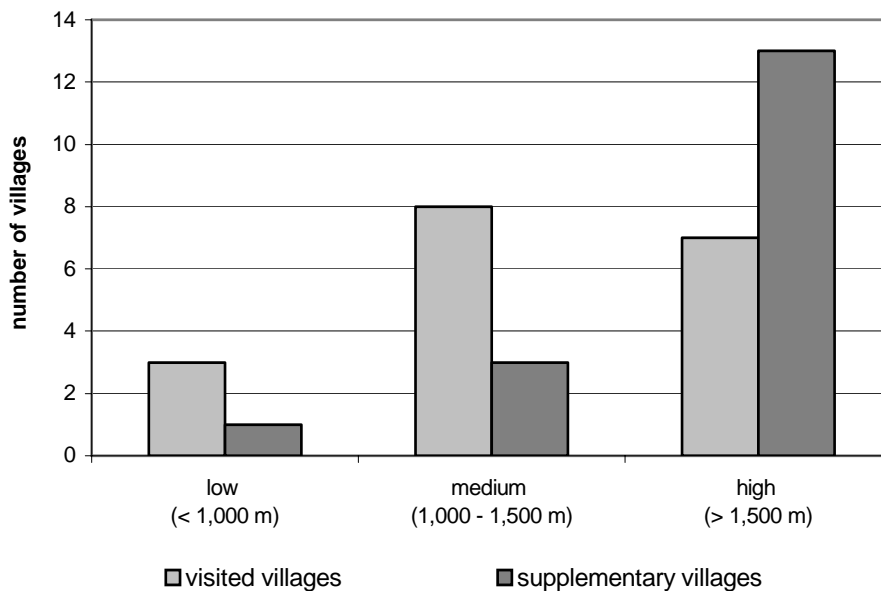
The focus group discussions were organised in a public space (e.g. in a school or a mosque) to ensure that there were no restrictions for joining the meeting based on location. Four teams were created who worked in 18 villages of four Union Councils. In addition to the villages studied in some depth, the evaluation also included 17 supplementary villages where solely data about the fate of the distributed cows and calves was collected in order to broaden the cow sample as much as possible. These villages were accessed remotely, by means of interviewing the responsible LFAW about the status of each distributed cow. In sum, the team was able to collect information about the status of cows in 35 out of 110 project villages, and about 1,238 of the cows distributed. This figure represents 38.7 per cent of all donated cows and thus adds to the statistical significance of presented interpretations and conclusions.



Source: Topographical base map Muzaffarabad, design by ZELF evaluation team 2009

Figure 3.1: Location of selected villages for field enquiry

Logistical reasons limited the area of investigation to the following Union Councils: Saidpur, Talgran, Nura Seri and Kahori. The remaining UC Panjkot was not visited during the evaluation, because travel times to project villages would have been too long. Within the group of remaining villages efforts were made to select sample villages randomly in a way that differing levels of elevation, distances from the point of cow distribution in Pattika and road access would be represented. Accordingly, one selection criteria was the altitude of a village. The GRC/ICRC project distinguished three different levels of elevation: low (<1,000 m), medium (1,000 m - 1,500 m) and high altitude (>1,500 m). These levels were taken to identify three low-, eight medium-, and seven high-level study villages (Figure 3.2).



Source: Survey by ZELF evaluation team 2009

**Figure 3.2: The distribution of surveyed villages according to altitude**

The mean altitudes for visited sample villages vary from 855 m (Kahori Village) to 2,035 m (Dhaman Jhol). The study villages also differ in their number of inhabitants and receipt of donated cows (see Table 3.1). Another factor that needs to be considered on village level is the distribution of donated cows between August 2006 and November 2007.

Table 3.1: Surveyed settlements in four Union Councils: location, size and distribution of cows

	UC Saidpur			UC Talgran			UC Nura Seri			UC Kahori					
	Pop.	Altitude	donated cows	Pop.	Altitude	donated cows	Pop.	Altitude	donated cows	Pop.	Altitude	donated cows			
	600	1080	20	Rajkot	2150	1708	41	Batljan	735	1968	28	Kahori Village	2100	855	48
	785	1435	36	Rialli	1480	1772	80	Basankot	2000	1075	39	Batangan	840	1032	29
	1400	1470	52	Said Batta	1400	1330	36	Karka	695	870	31	Madar	360	975	23
	1030	1533	44	Talgran Village	2500	1832	99	Dhaman Jhol	965	2035	31				
				Rajpian	1500	1732	41	Choon	1150	1202	49				
								Botha	860	1024	45				
	196	1900	28	Ghomat	820	1756	31	Podeymar	1284	1784	21	Hariala	n.d.	1855	29
	105	1661	15	Ghena	1450	2100	47	Seri Dara	1520	1380	37	Khourian	710	1151	14
	610	1832	21	Jhabri Jabian	n.d.	1850	11	Kandar	1235	1682	25	Mairra	n.d.	n.d.	24
	948	1863	35					Khalas Chalian	1780	1550	37	Pursccha	n.d.	n.d.	26
	735	1700	28												
	2760	1829	36												

visited villages

supplementary villages

Source: Survey by ZELF evaluation team 2009



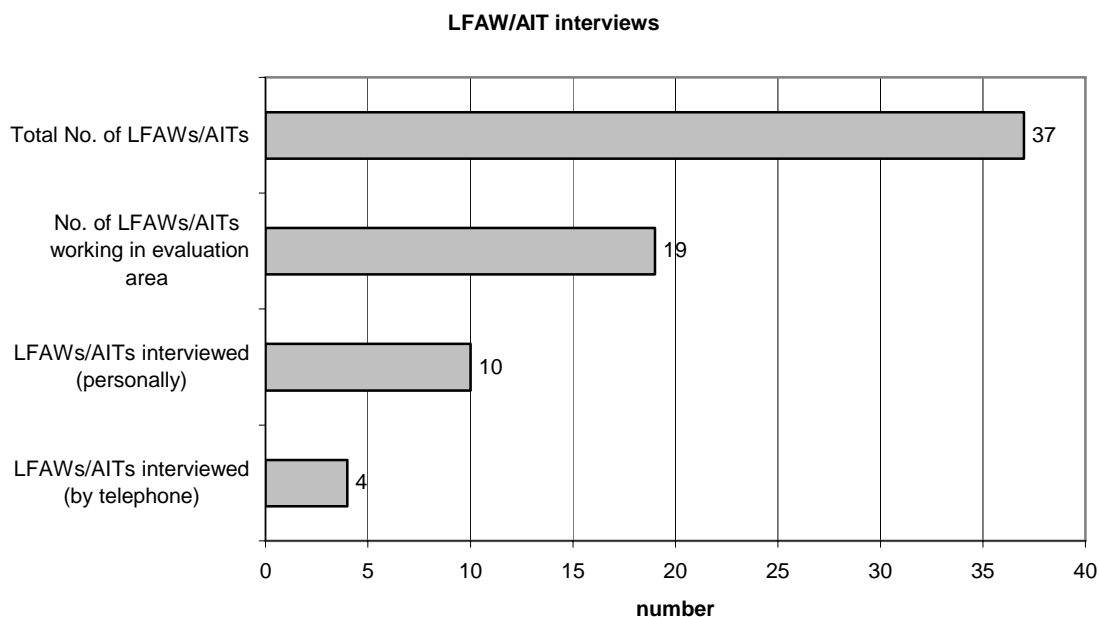
### 3.1.2 Household Level

In a second step, in-depth semi-structured interviews with beneficiary households were conducted in each study village. Each household was expected to develop different strategies to cope with crises. To better understand these strategies, the evaluation team tried to interview as many beneficiary households in a given village as possible given the existing time constraints. At the household level it was aimed to investigate the impact of animal husbandry on household economic security, but also the importance of agricultural activities and off-farm labour on livelihood security. One of the major challenges was to find a way to attribute the livestock donation to changing adaptation strategies and household welfare.

In sum 100 household interviews were conducted in the 18 study villages (see Interview guidelines in Annex A). Again the attempt was made to select different types of households in terms of structure and composition as well as economic conditions. From the 100 households interviewed, eleven were female-headed. The interviewed households were distributed widely across a particular village and located at different elevation levels within the village. To record the household's elevation and position, GPS equipment was used. The teams also took the different distribution lists generated by the GRC/ICRC livestock programme into account, so-called List A and List B. The GRC/ICRC distinguished between List A and List B households with the difference being that households from List B had never kept a cow prior to the earthquake. The survey sample comprised of 74 List A, and 26 List B beneficiary households. The interview was conducted in the majority of cases with the head of household. If the head of household was not available, other knowledgeable family members participated in the interview.

### 3.1.3 Expert Level

The third layer of investigation essentially focused on the performance of LFAWs and AITs as an important structural aspect of the project intervention. LFAWs and AITs working in the visited Union Councils of Talgran, Nura Seri, Saidpur and Kahori were invited to take part in a focus group discussion held in the ICRC office in Muzaffarabad (March 23<sup>rd</sup>, 2009). The evaluation team was able to talk to 14 out of 19 LFAWs/AITs trained by the GRC/ICRC and working in the study area (Figure 3.3). Nine were present during the group discussion, while four were interviewed by telephone. One LFAW was met at a village a few days after the meeting. Additional information about the performance of LFAW/AIT was gathered from village people in their working areas. Out of the five LFAWs who were also trained as AITs, three were present during the group discussion. The remaining two were interviewed by telephone.



Source: Survey by ZELF evaluation team 2009

**Figure 3.3: Interviewed LFAWs/AITs**

In addition to LFAW and AIT, expert interviews were conducted with the Government live-stock organisation, the Department of Animal Husbandry (DoAH), in order to assess the level of cooperation between community and government animal health workers. Recur-rent conversations with GRC/ICRC project staff added another level of expertise that helped to inform the evaluation and its conclusions.

The approach based on three lines of investigation proved to be appropriate in order to estimate the effect of the GRC/ICRC Livestock Programme as a package for village devel-opment, household benefit and human capacity building by provision of training in profes-sional skills.

### 3.2 Implementation of Methodological Approach and Field Lo-gistics

Between the 18<sup>th</sup> of March and the 1<sup>st</sup> of April 2009 the evaluation team worked in the study area (see Tables 3.2 and 3.3). Four teams were established, each consisting of two Masters students from FU Berlin and one local field officer, who previously participated in the livestock programme. These teams visited 18 villages in four different Union Councils (see Table 3.3). The approach followed was to ensure that each team was able to spend two consecutive days in one village. The first day was used for focus group discussions and to introduce the field team to the village community and to gather contextual data. The second day was devoted to individual household interviews. This approach proved fruitful, although detrimental weather conditions on three days during the study period restricted the field movements of the teams. This led to a slight modification resulting in a combined

effort: two field teams visited one village together in order to conduct group discussions and household interviews on a single day. Office days were used for data processing, the establishment of a comprehensive database using SPSS software and telephone interviews with LFAWs. The latter were conducted to broaden the database on the status of donated cows three years after distribution. Those “supplementary village surveys” solely devoted to list enquiries were established for 17 additional villages that were not physically visited by field teams.

**Table 3.2: Overview of Evaluation Activities**

Village level	Household level	Expert interviews
18 village focus group discussions	100 household interviews	14 LFAW/AIT interviews
17 supplementary village surveys		1 group interview at DoAH, Muzaffarabad 4 in-depth interviews with current and former employees of the GRC/ICRC project

Source: Survey by ZELF evaluation team 2009

Additional restrictions were posed by the transport time needed to reach the villages and households, with many of them requiring more than two hours to reach by jeep each way. In line with the security rules of the GRC/ICRC that restricted field movements to between 9am and 5pm, this posed a time constraint for the field teams.

The whole evaluation process was amicably supported by a professional technical infrastructure (office space, accommodation, transport) provided by the ICRC in Muzaffarabad. In addition to the technical assistance, all staff members of the GRC/ICRC, both in the headquarters in Islamabad and in the field office Muzaffarabad, provided enormous support and acted as useful pool of knowledge, generated from their experiences with the project and the area. Table 3.3 provides an overview of the team activities during the period of field research in its amended schedule. In hindsight cooperation within the teams was very fruitful and despite detrimental weather conditions on several days a significant sample of villages and households could be visited and interviewed and provided the data base for findings that enable an interpretation of the effect and success of the livestock programme.

Table 3.3: Team activities during the evaluation process

DATE	DAY	TEAM 1	TEAM 2	TEAM 3	TEAM 4
		MEI Team & ZELF Team	Ali & ZELF Team	Robina & ZELF Team	Asif & ZELF Team
15.03.2009	Sunday	Arrival of German Team in Islamabad			
16.03.2009	Monday	Briefing session with GRC in Islamabad including discussion of security issues and logistics of fieldwork			
17.03.2009	Tuesday	Workshop with GRC/ICRC in Islamabad on EcoSec approach and discussion of research plan and methodological approach			
18.03.2009	Wednesday	Arrival of German Team and Meeting / Briefing / Planning (Muzafarabad)			
Participants		Dragan, Arif, MEI Team (Fouzia, Mamoon, Amer, Mohsin), Ali, Robina, Asif and German Team (Michael/Heiko/Stephan/Sirkka/Daniel/Lisa/Mattes/Jan/Stefan/Hermann)			
19.03.2009	Thursday	UC Nura Seri - Batlian	UC Kahori - Kahori	UC Saidpur - Bagh	UC Nura Seri - Karkar
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
20.03.2009	Friday	UC Nura Seri - Batlian	UC Kahori - Kahori	UC Saidpur - Bagh	UC Nura Seri - Karkar
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
21.03.2009	Saturday	UC Talgran - Rialli	UC Saidpur - Choon	UC Nura Seri - Basantkot	UC Kahori - Batangan
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
22.03.2009	Sunday	UC Talgran - Rialli	UC Saidpur - Choon	UC Nura Seri - Basantkot	UC Kahori - Batangan
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
Field Visit of backstopping team to Podemar Village, UC Nura Seri					
23.03.2009	Monday	LFAW Focus Group	LFAW Focus Group	LFAW Focus Group	LFAW Focus Group
Participants		All Teams	All Teams	All Teams	All Teams
24.03.2009	Tuesday	Data Processing	Data Processing	Data Processing	Data Processing
Participants		All Teams	All Teams	All Teams	All Teams
25.03.2009	Wednesday	Data Processing	Nura Seri - Botha	Telephone Interviews - LFAW	UC Nura Seri - Botha
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
26.03.2009	Thursday	UC Saidpur - Pehalian	UC Talgran - Talgran	UC Saidpur - Pehalian	UC Talgran - Talgran
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
27.03.2009	Friday	Data Processing	Data Processing	Data Processing	Data Processing
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
Expert Interview with Department of Animal Husbandry. Participants: Director General Dr. Riaz Hussain Shah - Assistant Disease Investigation Officer Dr. Mir Zaman Awan - Assistant Director Technical Dr. Adnan Rasheed Malik - Planning Officer Dr. Raja Mohammad Khan					
28.03.2009	Saturday	UC Talgran - Rajkot	UC Saidpur - Jhangri	UC Talgran - Rajkot	UC Saidpur - Jhangri
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
Field Visit of backstopping team to Dhatura Village, UC Saidpur					
29.03.2009	Sunday	UC Nura Seri - Batlian (revisit)	UC Nura Seri - Dhaman Jhol	UC Nura Seri - Batlian (revisit)	UC Nura Seri - Dhaman Jhol
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
30.03.2009	Monday	UC Saidpur - Sangri Mugnar	UC Talgran - Said Batta	UC Saidpur - Sangri Mugnar	UC Talgran - Said Batta
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
31.03.2009	Tuesday	UC Kahori - Madar	UC Talgran - Rajpian	UC Kahori - Madar	UC Talgran - Rajpian
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
01.04.2009	Wednesday	Data Processing	Data Processing	Data Processing	Data Processing
Participants		MEI & Michael/Stephan	Ali & Mattes/Jan	Robina & Sirkka/Heiko	Asif & Lisa/Daniel
02.04.2009	Thursday	Transfer of German Team to Islamabad			
03.04.2009	Friday	Debriefing with GRC/ICRC in Islamabad			
04.04.2009	Saturday	Departure of German Team			

Source: ZELF evaluation team 2009

# Chapter 4 - Assessment of production intervention

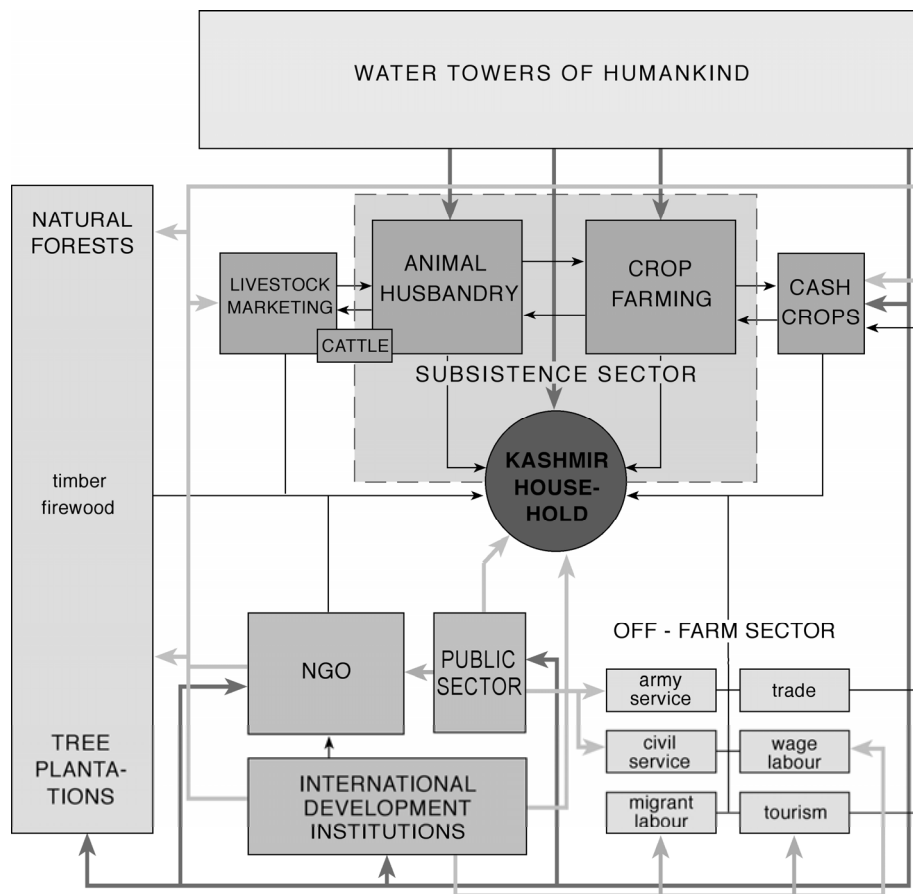
This chapter presents the field research findings based on the methodology outlined in Chapter 3. Thereby, different layers of investigation and subsequent interpretations are presented as follows:

- Section 4.1 presents the beneficiary household in its context by focusing on the embeddedness of households in broader farming and livelihood systems. This contextual assessment is important to assess in what ways the donated cow may contribute to widening the choices and options of households.
- Section 4.2 focuses on the village level and presents findings pertaining to the status of the donated cows three years after restocking. It was found, that from the 1,238 cows that make up the sample population, 49 per cent are still with the original beneficiaries, and 42 per cent have been disposed of. In nine per cent of cases the present status has not been verified. However, these figures have to be scrutinised in greater detail to obtain a better understanding of the situation, as in many cases households were able to replace the donated cow with a higher valued milking animal and thus have improved their situation. The reasons for disposing off the original cow are examined in detail, and specificities of village data as well as inter-village variations are elaborated on and presented.
- Section 4.3 looks at the surveyed households in more detail and presents evidence as to how the donated cow is utilised by beneficiaries and how it contributes to the household economy. It also focuses on the problems affiliated with the project and the variety of reasons that led certain households to dispose of their cow.
- Section 4.4 attempts to synthesise the analysis and presents a household typology that exemplifies the factors that determined the performance of successful households and those that failed to handle the cow donation. This is important in view of the potential replicability of the project, which may require more careful measures of targeting beneficiaries.

## 4.1 Farming Systems

Farm management is usually embedded in a complex socio-economic and institutional framework. Households operate simultaneously in a mixed farm system combining agriculture with animal husbandry, and using off-farm labour to supplement the household economy. Farmers are thus often forced to make trade-offs between multiple and sometimes competing objectives (Figure 4.1; see also Ehlers & Kreutzmann 2000, Roe 2008).

This certainly holds true for beneficiary households in the study area, which do not depend solely on a milking animal for their livelihood. The cow merely functions as one important asset which is embedded in a system of resource management strategies. These strategies, in the study area of Muzaffarabad District, are predominantly directed towards household consumption. Only limited quantities of agricultural production and products from animal husbandry are supplied to the market. The monetary income of the 100 study households mostly derives from off-farm activities, such as skilled and unskilled wage labour and entrepreneurship, as well as service in government and non-governmental institutions.



Source: Adapted from Kreuzmann & Stadel 2000: 89; Kreuzmann 2006: 330

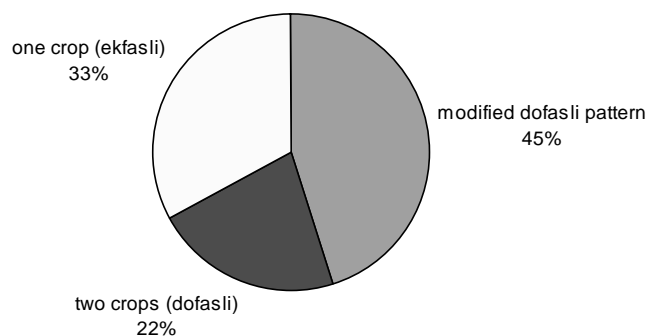
Figure 4.1: Income-generation of Kashmir household

To understand the specific contribution provided by the cow to the household economy and the impact of improved animal husbandry, a household's agricultural and off-farm activities must be considered as well. Therefore, the following sections 4.1.1 and 4.1.2 focus in detail on the agricultural production and animal husbandry of the surveyed households.

### 4.1.1 Agriculture

The villages in the study area show a large variation in average elevation. This variation is reflected in different cropping patterns observed among study households (Figure 4.2). However, the specific geographical settlement structure in the area leads to the fact that even within a given village different elevations are present - for instance, in the village of Talgran the lower and upper parts are spread over an altitudinal range of 600 m. Consequently different agro-ecological zones are to be observed even in a single village. Since agricultural activities usually take place close to the settlements, and terraced fields, orchards and vegetable gardens are typically located on the slopes in the vicinity to the houses, each household has a different degree of accessibility to its share in village lands, depending on where a farmstead is located within the scattered settlement.

Generally, three main categories of farming can be distinguished in the study area: harvesting one crop (*ekfasli*) per year, harvesting two crops in sequence per year (*dofasli*) or a third category of a modified *dofasli* pattern in which the first crop sown (the spring crop) does not fully mature and is solely utilised for fodder purposes.



Source: Household survey by ZELF evaluation team 2009, N=18

Figure 4.2: Cropping patterns in villages of study area

In the 18 study villages, many of which spread over different agro-ecological zones, six (=33%) rely solely on single-cropping. Two of these villages harvest one crop, usually maize, and then sow another one, usually wheat, which does not grow to full maturity and where the produce is used as a source of fodder for the livestock. Another four villages (=22%) harvest two crops (*dofasli*). In eight villages (=45%) a mixture of these cropping patterns can be found (Figure 4.2).

It has been observed that at low and middle elevations only ten per cent of the households cultivate one crop, while 90% cultivate *dofasli*. This is due to the higher average temperatures at lower altitudes which allow a longer vegetation period than at higher altitudes. At altitudes of more than 1,500 m the climatic conditions do not always permit a sequence of two fully matured crops for harvest per year. Here, only 25% of the interviewed households cultivate *dofasli*, while 75% of them cultivate *ekfasli*.

The main staple crops cultivated are wheat and maize. In lower elevations rice featured as a prominent crop before the earthquake, which however completely destroyed the existing irrigation infrastructure of the study villages. Restoration of the irrigation channels proceeds only very slowly and is far from being finalized. Many villages continue to depend on rainfed agriculture solely, leading to an overall decline in agricultural productivity. As one farmer in the village of Sangri Mugna stated, *“Now our field is rainfed. Before the earthquake we were able to irrigate our land, but the channel broke and we are not in a position to repair it by ourselves. Now our harvests are much lower than before”* (farmer of Sangri Mugnar, UC Saidpur, interviewed on March 30, 2009).

In eight villages the entire agriculture is now rainfed. It has been estimated by local ICRC staff that a decline in harvests of about 50% has occurred, forcing households to search for other livelihood opportunities. However, in some villages at the lower and middle altitudes some success in repairing irrigation channels has been noted, and the acreage and numbers of rice fields are slowly increasing (Box 4.1).

**Box 4.1: Back to rice**

A study household in the village of Madaar consists of 15 members and owns five *kanal*<sup>1</sup> of irrigated land. Crops cultivated are rice, maize and wheat in a double cropping pattern system. This is possible because in Madaar reconstruction of the irrigation system has proceeded comparatively well, and the interviewed household members stated that they are now in a position to engage in rice cultivation again. The household also grows vegetables like mustard, spinach, onions and garlic. However, the yield from all agricultural activities covers the household basic food needs for a mere two months per year; for the remaining months of the year the household depends on food purchases from the market.  
*Interview on March 31, 2009 in Madaar in UC Kahori*

Vegetables cultivated include pulses, onions, spinach, carrots, mustard, tomatoes and potatoes. Furthermore, some households cultivate horticultural crops like apricots and walnuts in their orchards, which serve as an additional food source (Table 4.1).

**Table 4.1: Major crops cultivated in the Union Councils Talgran, Nura Seri, Kahori and Saidpur**

<b>Cereal Crops</b>	wheat, maize, rice
<b>Pulses</b>	beans, lentils
<b>Horticultural Crops</b>	apricots, almonds, walnuts
<b>Vegetables</b>	potato, carrot, onion, garlic, tomato, mustard, spinach

Source: Household survey by ZELF evaluation team 2009

<sup>1</sup> *Kanal* is the common unit to measure land in PaK. One *kanal* equals 505 m<sup>2</sup>.



**Land Property among study households**

Access to agricultural and grazing land is the basis for all activity in cultivation and animal husbandry and thus assumes central importance for rural livelihoods in Kashmir. This is reflected by the fact that among the study population a vast majority owns land, but eight per cent are landless and have to depend on sharecropping activities or rainfed agriculture on communal land (Table 4.2). The maximum size of rainfed land among study households is 17.5 *kanal* while that of irrigated land is 35 *kanal* (Box 4.2).

**Table 4.2: Landholdings per household**

	N	minimum	maximum	average	Standard deviation
Own cultivated rainfed	90	0	17.5	2.794	3.5277
Own cultivated irrigated	91	0	35.0	1.641	4.3011
Own grassland	80	0	50.0	6.203	9.2715

Source: Household survey by ZELF evaluation team 2009

**Box 4.2: Example of an affluent household: recovery to prosperity**

The household is situated at 1,429 m in the village of Saidbatta, UC Talgran, and consists of six household members.

The household owns 35 *kanal* of irrigated cultivated land and five *kanal* of grassland, making it the wealthiest household studied in terms of land property. Additionally, the household owns ten *kanal* of forest which is located 45 minutes walking distance from the village. The irrigation system of the village and that particular household was rebuilt by the ICRC not too long after the earthquake.

Ten *kanal* are intensively irrigated and rice is cultivated, 20 *kanal* are used to cultivate wheat and maize and five *kanal* are used to cultivate vegetables. None of the crops are marketed, and the wheat and rice harvests cover the household needs for four months of the year only. The harvest of maize provides the household needs for a whole year. Additional agricultural labour is hired, with payment for wage labourers being provided in kind. The household owns two cows, including one donated cow, one oxen and a buffalo calf. Chemical fertilizer is used on the fields in addition to animal manure. For ploughing the oxen is used.

It represents a good example of a successful recovery after the earthquake, though the cow donation by the ICRC might not have been the decisive element for that recovery. Rather, land property and its quick restoration appear to be the determining factors. Put differently, the household represents a case where the cow donation increased the wealth of an already affluent household.

*Interview on March 31, 2009 in the village of Saidbatta*

The agricultural output in the study area is almost completely utilised for private consumption within the respective households. In only one exceptional case cultivated crops were offered at the market to generate additional income. Since most households do own cultivated land which rarely exceeds five *kanal*, the vegetable and crop harvest covers the average household needs for about two to four months in a year, depending on the size of the land and household size.

With rising altitude the size of irrigated land owned by a household decreases, whereas the size of rainfed land increases. The average size of rainfed land per household at low and middle altitudes is two *kanal*, that of irrigated land 2.6 *kanal* (Table 4.3).

Table 4.3: Cultivated rain-fed and irrigated land-holdings per households located below 1,500 m

	N	minimum	maximum	average	standard deviation
Own cultivated rain-fed	57	0	11.0	1.838	2.9011
Own cultivated irrigated	56	0	35.0	2.586	5.2488
Own grassland	49	0	40.0	5.910	9.2581

Source: Household survey by ZELF evaluation team 2009

Table 4.4 shows that at high altitudes, the average size of rainfed land per household is 4.5 *kanal* while that of cultivated irrigated land does not even reach one-fifth of a *kanal*. The maximum of irrigated land per household in those altitudes is 4.5 *kanal* which is comparatively small in relation to the maximum of 35 *kanal* at middle and low altitudes. Overall, the average size of grassland owned at high altitudes is slightly larger than at low and middle altitudes.

Table 4.4: Cultivated rain-fed and irrigated landholdings per household located above 1,500 m

	N	minimum	maximum	average	standard deviation
Own cultivated rain-fed	33	0	17.5	4.447	3.9289
Own cultivated irrigated	35	0	4.5	0.129	0.7606
Own grassland	31	0	50	6.665	9.4269

Source: Household survey by ZELF evaluation team 2009

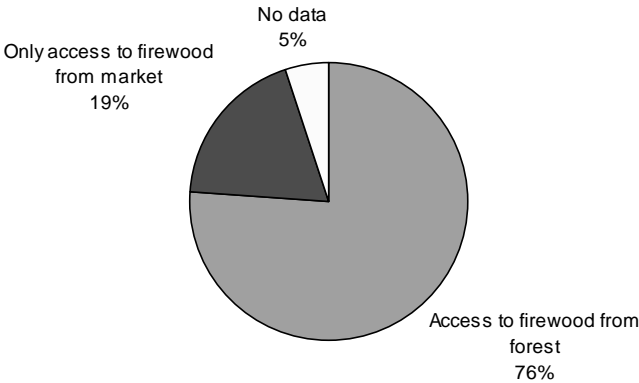
These results indicate that agriculture significantly varies over altitude. All farmsteads have in common that they can not sustain rural livelihoods alone. The latter statement is of great importance when the significance of agricultural enterprises for the livelihoods is to be assessed. Agricultural activities are ubiquitous, characterise the cultural landscape, and function as the backbone of the rural economy. At the same time its contribution to household incomes and welfare are rather limited. Nevertheless, the foundation of the rural economy is more important in times of risk and stress. Therefore, the nominal contribution of agricultural proceeds might underestimate its importance for survival strategies as they compose the most reliable basis of household security.

Monetary income can hardly be generated from agriculture, which underlines the critical importance of establishing access to off-farm labour activities. The complexity of income sources reflects the aim of diversification in order to enhance security. In the study area migrant labour is of utmost importance, and the off-farm sector is examined in detail in Chapter 4.4.

However, it is also obvious from the findings presented above that the agricultural sector plays a central role for animal husbandry and thus also for how successfully the GRC/ICRC cow donation has attributed household farming systems. Access to grazing land to supplement animal fodder is central to this argument. Crop residues from farming land are an equally important fodder source, as is the prematurely harvested wheat taken from fields where a fully matured crop yield cannot be achieved due to agro-ecological reasons. The interrelationship of crop cultivation, orchard harvesting and animal husbandry is one of the central features of mountain communities and their adaptation strategies (cf. Ehlers & Kreutzmann 2000, Kreutzmann & Stadel 2000, Kreutzmann 2006). Interdependencies and interlinkages form an important web for survival in peripheral regions and risk mitigation in marginal environments.

### 4.1.2 Access to forest resources

Every household uses firewood for heating and cooking, whereas animal manure is not used as fuel. The dependence on locally available and accessible energy resources makes access to timber and firewood another important livelihood ingredient. Most sample households (76%) are eligible to access privately owned or state forests. Those household who are prevented from access to forest resources (19%) need to allocate monetary income to purchase needed firewood from markets (Figure 4.3).



Source: Household survey by ZELF evaluation team 2009, N=100

**Figure 4.3: Household access to firewood from forest**

Use of the forests is regulated by state authorities. People are only allowed to cut branches or to take out naturally fallen trees. Additionally, it is often necessary to pay admission fees for collecting wood. Government forest guards protect the forest from wood hunters and are the key people with whom to negotiate access to forests. Negotiation occurs because nominal admission fees are not affordable for many study households, and bargaining lower fees for illegal wood cutting appears to be a common practice in the study area (cf. Geiser 2004 and 2006).

### 4.1.3 Animal Husbandry

Animal husbandry forms an important pillar of the combined mountain agriculture and the rural economy of the study area. The livestock sector contributes substantially to the livelihoods of the households in the study area. Animal herds were especially affected by the earthquake, in which many households lost all of their livestock. This bottleneck was recognised and formed the impetus for the GRC/ICRC project with its aim of helping to restore animal husbandry in the earthquake affected areas.

Today, the average herd size in the studied households ranges between two to four animals, mostly constituting milking animals such as cows, buffaloes and/or goats. Only a few households per village also own a breeding bull or ploughing oxen. The latter is needed for the preparation of all agricultural fields in the area and thus gives households who own ploughing oxen the opportunity to rent out their animals for cash income. The shortage of oxen in the study area was also realized by the GRC fact finding mission in the immediate aftermath of the earthquake, and initially a donation of oxen along with milking cows was recommended by the mission (ICRC 2005: 13). This was altered subsequently because of the difficulty of finding sufficient numbers of oxen on Pakistan's livestock markets during the planning period of the project (*Interview on February 20, 2009 with Erhardt Bauer, Programme Coordinator*).

As shown in Table 4.5, the average number of milk giving livestock per investigated household was two before the earthquake, indicating that the pre-earthquake status has been achieved by many households.

Table 4.5: Livestock owned by households before the earthquake

	N	Minimum	maximum	average	standard deviation
number of all big livestock	98	0	7	1.79	1.688
milk giving cows	97	0	4	0.66	0.912
milk giving buffaloes	97	0	2	0.47	0.631

Source: Household survey by ZELF evaluation team 2009

The number of livestock a household keeps is influenced by many factors, such as the cash income of a household, size of land owned, access to fodder sources and the number of household members. Access to fodder sources is the main limiting factor for the number of livestock a household can sustain. Fresh and dried grass, leaves and straw and other residues of cultivated plants are used as fodder, which needs to be supplemented with high quality fodder from markets like *shuri*<sup>2</sup> and cubes of cottonseed. Fresh grass is cut from own land and/or purchased from other villagers. Each village also has communal grazing grounds, where grass can be cut. Sometimes each *mohallah*<sup>3</sup> of a village has its own com-

<sup>2</sup> *Shuri* is dried and pressed straw mixed with other residues from wheat or rice

<sup>3</sup> *Mohallah* is used in South and Central Asian languages to describe a locality or a neighbourhood in settlements.

munal grazing ground. Access to these areas is especially important for landless households. However, in many cases the communal grazing ground is located 2-3 hours walking distance away, requiring large time investments in order to access the communal resources. One third of the interviewed households do not own grassland, and it appears to be quite common to pay in cash for freshly cut grass from those who control sufficient resources (Box 4.3).

The use of summer grazing areas changed significantly due to the earthquake. Before the earthquake it was common for many study households situated at middle and higher altitudes to use high altitude grazing grounds during the summer months. In spring the local cows, goats, and sheep were led to the high pastures where they grazed freely until the beginning of autumn. Over these three to four months, entire households stayed with their livestock on these grazing grounds shared by one *mohallah* or the entire village.

#### Box 4.3: Investments into animal husbandry

The household in the village of Pehalian consists of seven members and now owns the donated GRC/ICRC cow in addition to a newborn calf. The household needs to allocate between 5,000-10,000 PKR per year for purchasing freshly cut grass from fellow villagers. In addition, the household needs to obtain *shuri* and cotton-seed pellets as special fodder from the market for 1,000-1,500 PKR per month. There is communal grazing land accessible for the household, but it is only used for cows from local breeds and not for the donated animals. The Punjabi cows distributed by the GRC/ICRC seem not to be adapted to the hilly terrain and have to be kept near the house at all times. Household members visit the grazing area to bring fresh fodder infrequently as it is about four hours walking distance and the time investment is considerable. The household owns 4-5 *kanal* of irrigated land where no fodder sources are cultivated and rents ploughing oxen and hires a labourer for 2,000 PKR every season. *Interview on March 26, 2009 in Pehalian of UC Saidpur*

Shelter was provided by summer huts and dairy products like yoghurt, ghee and cheese were processed on the spot. When most villagers lost their entire livestock in the earthquake this practice diminished significantly. The distribution of donated cows did not revive the practice of summer grazing because of the poor mobility of the new cows, which were not adapted to the rugged terrain. For instance in the case of Rajkot village in UC Talgran the communal grazing grounds were used by the entire village before the earthquake. Today, only two households continue going up to these higher pastures every season - all the others lost their livestock during the earthquake and were not able to build up new herds.

#### 4.1.4 Role of cow in the livestock economy

The highest valued livestock for households in the project area are cows and buffaloes. Their milk is highly appreciated for its nutritional benefits and especially given to children for their daily diet. Almost all beneficiaries stated that the consumption of fresh milk is directly connected to the health of children:

*"If our children do not get fresh milk every day they get weak and dumb."* (Beneficiary's wife of the village Pehalian / UC Saidpur, interviewed on March 26, 2009)

Milk and dairy products, cereal crops in the form of flour and vegetables make up the nutritional basis of the villagers. If chicken are owned, eggs will be consumed regularly. When sufficient milk is available, dairy products such as yoghurt, *lassi* and ghee are produced. Fresh milk is only drunk in tea or given to the children.

Milk surplus is occasionally shared with neighbours or relatives. Only twelve per cent of the study households engage in marketing of milk. This appears to be feasible only for households situated in villages located near to Muzaffarabad, although there is evidence that surplus milk production is also marketed inside villages (cf. chapter 4.4). Thus in some cases, the provision of the donated cow provided a new monetary income source, as the milk production of the Punjabi cow exceeds that of a local breed (Box 4.4).

**Box 4.4: Cash for milk: a beneficiary widow taps the source**

A study household in Saidpur consists of a widowed woman and her unmarried daughter. The residence of this household was completely destroyed during the earthquake and their three cows, three calves and one goat died.

Today, the household owns the GRC/ICRC cow with a calf and possesses 20 *kanal* of cultivated land, out of which five *kanal* are irrigated from a stream. The household grows vegetables, maize (as a sequential crop) and wheat (as a first crop) for their own consumption. During harvest time the household obtains external labour (mostly provided by neighbours) in exchange for food. For ploughing, a tractor is rented. Both animal manure and chemical fertilizers are used.

In spite of the comparatively large acreage of land owned, which accounts for most of the food needs of this two-person household, there was no source of cash income before the donated cow arrived.

The cow provides 4-6 litres per day, while the deceased cows gave just 1½ litre each. This rise in milk production enables the household to sell two litres of milk per day. This marketing of milk is the only monetary source of income for the household.

As the head of household says: *"I thank the people from the GRC/ICRC people every day in my prayers, for they have given me such a valuable animal as a gift."*  
*Interview on March 19, 2009 in UC Saidpur*

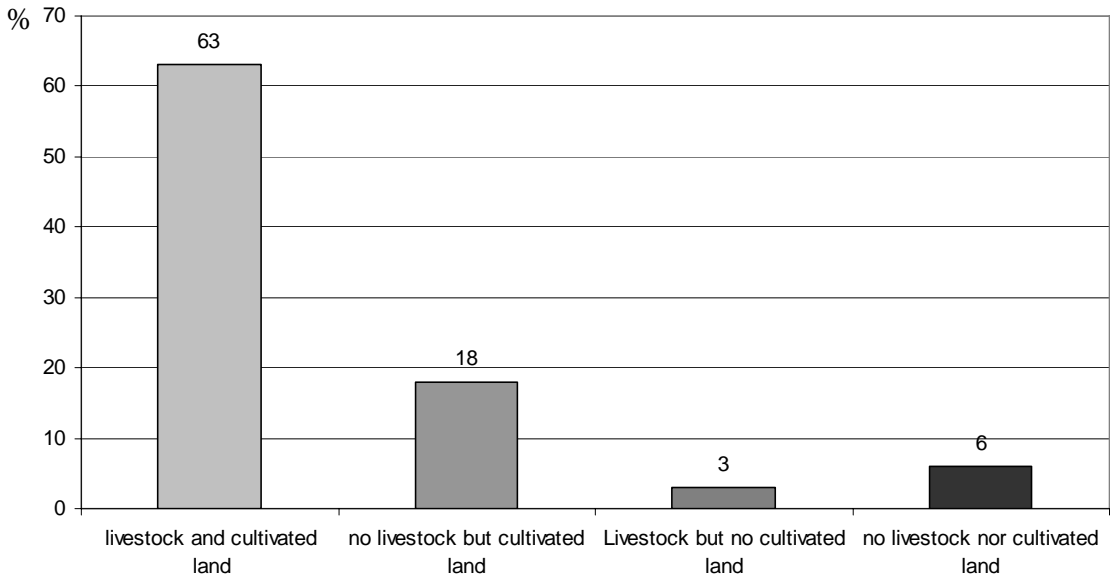
A buffalo can give up to twelve litres of milk per day if high quality fodder, such as cottonseed pellets, is provided in the adequate quantities, while a GRC/ICRC cow gives up to eleven litres given the same fodder provisions. The maximum amount reported for a local cow was six litres daily. When asked which animal is preferred by the beneficiaries, it was mostly stated that the buffalo is preferred over the GRC/ICRC cow and local cow because of its higher milk quality (buffalo milk is fattier than cow milk) and quantity. This explains

the fact that in some villages, such as in Karka of UC Nura Seri, many households strived to exchange the donated cows for a buffalo (see details in Chapter 4.3).

In many cases, however, households especially at higher altitudes preferred a local cow over a buffalo or a donated cow because of its adaptation to the terrain. In these cases, some households exchanged the donated cow for a local one or bought a new local cow if the donated cow had died. Although the milk of goats is also highly valued for children, their low milk production in relation to the input workload makes this a less economical option for poorer households (Chapter 4.4 for more details).

### 4.1.5 Interlinkages of agriculture and livestock economy

The dominant farming system in the project area can be classified as combined mountain agriculture that is defined as "... an interdependent combination of crop cultivation and animal husbandry that makes use of different ecological zones." (Stöber & Herbers 1999:37; cf. Figure 4.1 above; Ehlers & Kreuzmann 2000: 11-13). Also, among study households (Figure 4.4), a majority engage in this type of farming system (cf. IRIN 2006).



Source: Household survey by ZELF evaluation team 2009, N=100

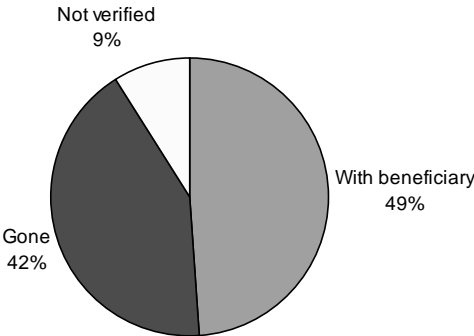
Figure 4.4: Percentage of households possessing livestock and cultivated land before the earthquake

The livestock economy is intricately interlinked with agricultural activities. In all study households with livestock, animal manure is used as fertilizer for the fields. Wheat and straw residues are used as fodder for livestock along with fresh and dried grass, together supplementing the high quality fodder only available at the market. Small sized and mountainous parcels of land are ploughed by hand and larger ones by oxen; out of 100 villages, only one household in the village of Bagh in UC Saidpur had the possibility of renting a

tractor because of the size, shape and accessibility of their land. Figure 4.4 shows the ownership of livestock and landholdings per household before the earthquake. It can be observed that more than half of the studied households (63%) generated their livelihood from a combination of agriculture and animal husbandry, which shows that this combination was the most important strategy to secure livelihood. Since the maintenance of livestock depends on regular fodder supply, only three per cent did have livestock without any cultivated land, while 18 % possessed cultivated land and no livestock. Only six per cent did not have any livestock or cultivated land at all, thus depending solely on off-farm income. How and to what extent the cow as part of the livestock is utilised and contributes to the overall income of a household will be discussed in the following.

### 4.2 Village-wise variations in cow utilisation strategies

The overall performance of the cow donation-package needs to be evaluated in terms of appropriateness, quality, durability and sustainable impact. Three years, more or less, after the distribution a strong indication for sustainable utilisation of proceeds from the cow donation-package would be the presence of the donated cow and/or its off-spring and/or the barter for another animal that supplied the household with additional assets.



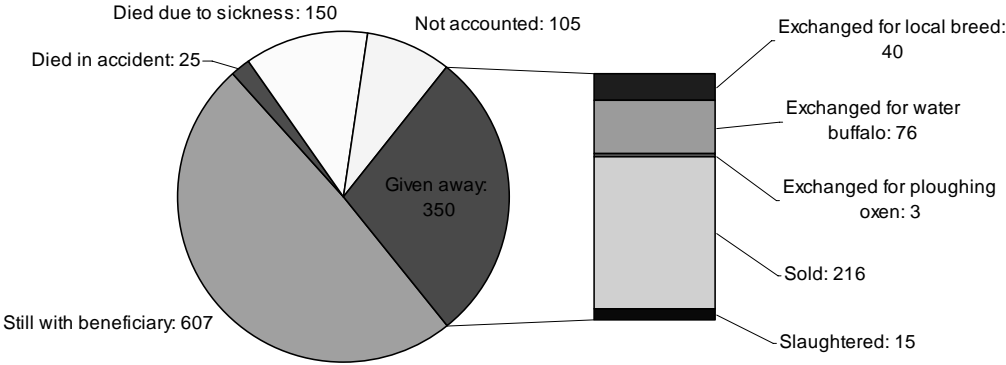
Source: Village survey by ZELF evaluation team 2009, N = 1,238

Figure 4.5: Cows present in beneficiary households

On the basis of the data gathered from 1,238 beneficiary households, the primary result indicates that 49% of beneficiaries still own the cows that were donated by the GRC/ICRC (Figure 4.5). The high quota underlines that about half of the livestock donated made a longer-lasting impact on the household economy of beneficiaries. The share of 42% of cows depicted as “gone” in Figure 4.5 needs further explanation. In many cases these animals were used as a cash box for investments into other assets or other, higher valued livestock. A significant percentage, however, had to be given away because the beneficiary household did not have the means to keep the animal or the animal perished because of sickness (Figure 4.6). Often in such cases the households retained the money for selling the cow or



at least used the meat of the animal. For the purpose of this report, however, it is especially important to look at why people were not able to or decided against keeping the cows (see Section 4.2.1).



Source: Village survey by ZELF evaluation team 2009, N = 1,238

Figure 4.6: Present status of cows

The field research uncovered that there is significant variation in terms of performances at the village level. The differing economical and social backgrounds within the study villages had a major influence on which decisions were made on how to utilise the donated cow. Not surprisingly then, the data on presence of cows differs significantly between the individual villages that were investigated in-depth (Figure 4.7).

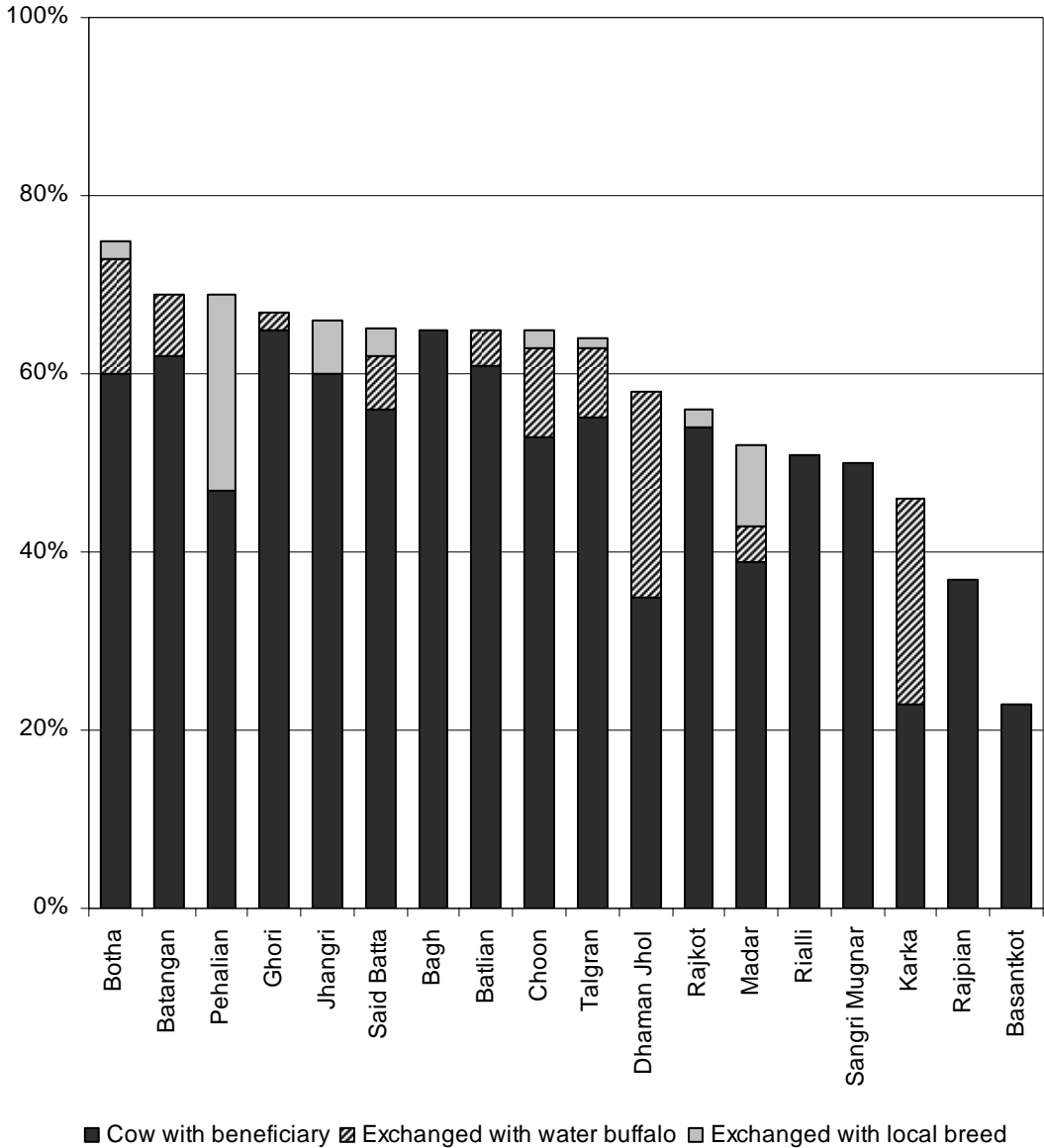
In order to provide an overview of the data collected during fieldwork, this chapter first examines what happened to the cows in the larger sample based on 1,238 households, and factors influencing the performances of single villages are analysed. This analysis shows which factors in the wider setting influence the performance of particular beneficiary households. Effects of the geographical factors altitude and distance to markets on the performance of villages are presented, and case study villages are compared in depth to highlight specific influences of economical and social patterns for project outcomes at the village level.

### 4.2.1 Reasons for the absence of cows in beneficiary households

Out of 1,238 households where donated cows were recorded, 525 cows are not with the original beneficiaries anymore. The reasons for disposing of the donated cow are manifold and represent varying capacities of beneficiary households to sustain the animal as well as factors that were beyond the control of particular households. For example, 25 cows in the sample died in an accident (such as falling off a terrace). While these accidents hardly could be avoided, the larger group of 150 perished cows died from illnesses which might have been cured or prevented. Another 15 cows had to be slaughtered because they were

declared sick, hurt, or because they were too aggressive. Out of the surviving animals, 216 cows were sold for cash. These substantial figures need further explanation. The enquiry was directed towards the reasons for giving away a valuable cow.

A significant number of 119 cows were exchanged for higher valued animals, 76 of them for water buffaloes, 40 for cows of a local breed more adapted to the terrain and feeding patterns, and three for ploughing oxen. The fate or whereabouts of another 105 cows could not be verified.



Source: Village survey by ZELF evaluation team 2009, N = 772

Figure 4.7: Variations in status of cows between villages

A wide range of different reasons were reported for why the donated cow was sold or exchanged for other bovines. The most important and striking motive was that the cow was

not seen to contribute to the needs of the household, or was perceived to overstrain the capacities or willingness of the households to care for the animal. In those cases, the donated cows were either sold for cash to a household which was in a better position to utilise them or exchanged for less demanding locally-bred cows. Lower milk yields of the local breeds are in line with lower expenditures for fodder. It is important to state that the sale of these cows often took place within the neighbourhood, so the donated cows are still to be found within the village. It confirms the fact that social settings and household's capabilities are more significant for the decision to keep a high-breed cow than agro-ecological aspects.

The reasons supporting the bartering of cows for water buffaloes follow different motivations. Buffaloes require more or less the same amount of care as a donated cow, but are esteemed for a better milk production on average, and 76 beneficiary households (6%) decided to invest a substantial amount of additional money into the exchange for a buffalo. However, without the cow donation those households could not have afforded a buffalo in the first place, but now profit from a high production of milk that is perceived as much better, more valuable and tastier than cow milk. Unlike the trade in local cows, trading in buffaloes took place on a regional or even national basis: either the animal was purchased from traders who had brought the animals from Punjab or Sindh, or people themselves travelled to Mansehra in the NWFP or the bazaar town of Ghari Habib Ullah (about half way to Mansehra from Muzaffarabad) where there are big weekly livestock markets. Often, these households already had a buffalo before the earthquake and engaged in the marketing of milk.

There were only three cases recorded in which the cow was exchanged for ploughing oxen. This observation indicates that the households' need for milk is substantial, and the utilisation of an own ploughing ox for the preparation of agricultural fields seems to be of secondary importance.

Cows were sold for cash usually only when the animals did not give milk and did not become pregnant, or sometimes, when the households were not able or willing to care properly for the cows - these cases indicate a real or perceived mal-performance of the donated animals. A second important reason was reported as being shortages of money for daily food requirements or other challenges that required quick investments. For instance, on one occasion it was stated that the cow had been given to a mason as payment for the construction of a new house. This illustrates that sometimes cows are regarded as saving account which can be drained in times of cash needs.<sup>4</sup>

There is strong indication that many of the cows that perished due to a sickness did so within three months after distribution. One reason for this has been evaluated to be the

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<sup>4</sup> This phenomenon is not restricted to PaK, it is well known and observed in other parts of South and Central Asia where livestock resembles a convertible wealth.

difficulties to adapt the cows from the low-lands of Punjab to the rather harsh climate of Kashmir and to provide adequate shelter before the onset of winter, resulting in many cases of pneumonia in the initial months. Another reason was the fact that after the stress of transportation, the cows were susceptible to sicknesses of all kind; mastitis and sicknesses of the digestive system occurred as well. Still, many of these deaths might have been prevented by proper health care. Accidents are often to be attributed to a lack of adaptation, as the donated cows were not able to move freely in the hilly environment. When it was foreseeable that a sick or hurt cow would not recover, it was usually slaughtered so that at least the meat could be consumed or sold. There is evidence of a few singular cases in which cows or calves were slaughtered for fulfilling religious obligations or for the meat.

In the villages visited during fieldwork, 694 calves have been distributed. Including those calves, reproduction rate since distribution has been a meagre 71.2%. Many of the calves died short after arrival, as they were especially susceptible to the stress of transportation. This figure reflects some problems in breeding as well, as there have been fewer births since distribution than had to be expected.

#### 4.2.2 Utilisation of cows in relation to altitude and market access

A significant number of animals, forty-nine percent of cows, are still with the beneficiary, and another 9.6 percent have been exchanged for higher valued livestock. This performance, in itself, is positive and underpins that the livestock distribution had a significant and longer-lasting impact on household economies within the last three years. To further qualify this observation, the variation between the sample villages is analysed.<sup>5</sup> Performances on village level vary widely and range from the village Basantkot (Box 4.5), where only 23% (9 out of 39) distributed cows are still with the beneficiaries (three were sold and all the others died), to the positive examples of Kahori and Bagh, where 65% of the distributed cows are still with the original beneficiaries (Figure 4.7). The outstanding village in the sample however is Botha (Box 4.6), where 76% of beneficiaries still possessed milk-giving animals at the time of the evaluation, whereby many improved their position through exchange of the donated cow into a water buffalo.

Throughout the implementation of the GRC/ICRC project, altitude and access to markets were respected as important factors influencing the way people might utilise their livestock. Consequently, the significance of these two factors needs some attention and further enquiry. Subsequently the performances of individual villages will be examined from a more qualitative point of view (Section 4.3.3). The combination of these perspectives leads to insights about factors to be considered when choosing the settings and beneficiaries of future projects.

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<sup>5</sup> For an overview of the villages in the sample see Table 3.3.

**Box 4.5: Basankot (Nura Seri UC)**

Number of households: 400  
 Altitude: 1,075m  
 Distance to next market: 80min driving to Pattika

Date of distribution: 03.10.2006

**Status of cows in Basankot**

Number of cows:	
Distributed	39
With beneficiary	9
Sold	1
Died because of sickness or deficits in care	29
<hr/>	
GRC/ICRC calves present	12
New-born calves	9
<hr/>	

Basankot has a rather favourable agricultural location. Before the earthquake, rice was grown here, and the irrigation system has been reconstructed.

Nevertheless, the donation of the cows does not seem to have worked very well. About 75% of the cows died, most of them very soon after distribution. In the focus group it was stated that the main problem was that distribution took place not long before winter. Seemingly, villagers were not well prepared to receive the cows, many did not have proper shelter, and fodder had not been stored for winter.

The village had been assigned a GRC/ICRC-trained LFAW, but the person did not develop the skills for treating livestock and soon dropped the profession.

Nevertheless, 12 out of 38 distributed calves are still alive, and nine calves have been born in the last 2.5 years.

Source: Village survey by ZELF evaluation team 2009

**(i) Altitude - a presumed constraint on adaptation for lowland cows**

In PaK, altitude does make a difference in terms of the agricultural system and thus to the way people utilise their livestock. As the cows originated from a plain and warm environment, it was observed during implementation that adaptation to the climate and the different quality of fodder in higher altitudes posed an additional hardship, especially for the bigger ones among the distributed animals (ICRC 2007d). The GRC/ICRC took measures to prevent the expected problems for villages in high altitudes, and Archai breed and smaller mix-breed animals were pre-selected for distribution to those places (ICRC 2007b: 12).

It is difficult to determine whether it has been this pre-selection or the fact that beneficiaries were aware of these adaption problems and thus put more effort into caring for the cows. As a matter of fact, no correlation could be found between altitude and the number of cows still with a beneficiary, the number of cows that died of sickness or that were exchanged into a cow from local breed or a buffalo. Neither could a correlation to the presence of calves be found. Harialla, the village where the highest ratio of GRC/ICRC cows are still present, is located at 1,855m above sea level, the same altitude as Jabri Jabian, which ranks rather low in terms of cows still present.

**Box 4.6: Botha village (Nura Seri UC)**

Number of households: 400

Altitude: 1,024m

Distance to next market: 25 min driving or 40 min walking distance to Muzaffarabad

Date of distribution: 03.11.2007

**Status of cows in Botha**

Number of cows:

Distributed	45
With beneficiary	27
Exchanged for buffalo	6
Exchanged for local cow	1
Sold	9
Died because of sickness or deficits in care	2
GRC/ICRC calves present	23
New-born calves	18

In Botha villagers were engaged in marketing animal products before the earthquake. It has been characterized as a 'Dairy Village' by the focus group as well as by ICRC staff.

Thanks to this experience many of the donated cows are still present in the village, in spite of the late distribution in November. Also, Botha shows a high fertility-rate of the donated cows.

Botha represents a case where the donation of cows and calves has been very successful. Beneficiaries used these animals for re-establishing their herds and many exchanged cows for buffaloes. These were perceived more suitable for household needs. Consequently, livestock remains an important source of income-generation and/or household supplies.

Source: Village survey by ZELF evaluation team 2009

**(ii) Market access as a differentiating factor for the utilisation of livestock**

There is strong evidence that market access makes a difference to the income structure in a village as well as to overall wealth. In household interviews as well as in focus group discussions it became clear that people with easier access to education and labour markets very often took advantage of these possibilities. In the market places, Kahori village (Kahori UC) and Rajpian (Talgran UC), many people found work in shops, and in villages close to Muzaffarabad, i.e. Botha, Dhaman Jhol, and Batlian (all Nura Seri UC), a larger number of people had regular employment or government jobs.

With respect to the utilisation of donated cows, two hypotheses were guiding the analysis. The first hypothesis was that good market access might have a negative influence on how highly people value their cows. If people have the possibility to earn a regular monetary income that can fulfil a substantial share of their needs, it may be expected that resources will be withdrawn from farming and breeding. However, no significant correlation between the distance to either the local market or Muzaffarabad and cow survival or reproduction was detected that would have supported this hypothesis. Standard deviation in this comparison between villages is pretty high, so overall variation is considerable.

The second hypothesis was that beneficiaries in villages close to markets would take advantage of this access and sell some milk, and then reinvest part of the revenue into fodder and health care for the cow. Market access in this context is not only crucial for the sale of milk, but also for purchase of high nutritional fodder and availability of animal health services. This was observed in villages within walking distance from major markets, like Botha (Nura Seri UC) close to Muzaffarabad and Karka (Nura Seri UC) located just above Pattika Town. In Karka, many households exchanged their cows for buffaloes immediately after distribution, as a lot of villagers had owned water buffaloes already before the earthquake, and now resumed their milk selling activities. Harialla (Kahori UC) in turn, the village where most of the donated cows are still present, is located two hours from Muzaffarabad by car.

In terms of village statistics, there is only a correlation of medium strength to be found: villages in the vicinity of Muzaffarabad tend to exchange a bigger proportion of the donated animals for buffaloes. It might thus be concluded that people from places close to Muzaffarabad are willing to make more capital investments into the animals, and use them in a far more output-oriented way. Still, how well people tend the donated cows does not depend on market access.

**Box 4.7: Rajpian (Talgran UC)**

Number of households: 400	Rajpian is a rural market town, and there are about 50 small shops in the centre of the village. All of the households interviewed there derived some income through those shops. However, none of them sold any milk on the market.
Altitude: 1,732m	
Distance to next market: Rajpian is a local market town itself; driving distance to Muzaffarabad is two hours.	According to the focus group, many cows were sold because beneficiaries moved out of the village after the earthquake. Reasons for the extremely low fertility rate (three calves from 15 cows in 2.5 years) are that the locally available breeding bulls are too small in stature, and that the Artificial Insemination Technician is not very well accepted.
Date of distribution: 21.10.2006	
<b>Status of cows in Rajpian</b>	
<b>Number of cows:</b>	
Distributed	41
With beneficiary	15
Sold	15
Died because of sickness or deficits in care	5
Slaughtered	1
Not verified	5
GRC/ICRC calves present	11
New-born calves	3
Many villagers own summer grazing grounds; the maintenance of the cows however poses a constraint to seasonal migration.	

Source: Village survey by ZELF evaluation team 2009

### (iii) Decisive factors in individual villages: economical and social patterns and the need for aid

Less easily quantifiable but equally important are factors such as economic situation of the villages, the course reconstruction activities took since the earthquake, as well as the social set-up.

In Rajpian (Box 4.7) and Botha (Box 4.6 above), for example, existing economical structures seem to have influenced the performance of the GRC/ICRC cow donation especially strong. In Rajpian, the local market is the most central factor in the village economy, but there are a lot of migrants, too. In contrast to Botha, beneficiaries in Rajpian do not sell milk, but use it mainly for their own consumption. The rather modest success of villagers of Rajpian in keeping the donated cows might be attributed to the fact that much energy in rehabilitation went into rebuilding the infrastructure of the market.

Botha has had a tradition in the sale of milk before the earthquake already, which could be resumed after the donation of the cows. Almost all households interviewed sold milk on a daily basis to contractual customers in Muzaffarabad, and milk was even sold to other villagers. Out of ten households interviewed in Botha only one shares milk with fellow villagers (one gave the cow away and in return receives some milk every day).

Apart from Botha, Karka was the only village in the sample where marketing of milk plays an important role in the village economy. In those two villages, contractors known as professional *thekedars* are operating who buy milk from the villages to sell in market places. In all other villages, the economic role of the donated cows lies in the fact that households or even entire families became independent from the need to regularly purchase milk. The higher milk yields now available to households, however, also mean an increased dependence on the market for fodder purposes. This also implies an increase in mobility, as only in Talgran and Kahori villages the high quality fodder was available locally. In all other cases, special fodder had to be carried from a market place.

In some villages it was stated that sale of milk was socially not acceptable. Thus, not only the relative economical profit people hope to gain from the cows has a big influence. It has been observed that there is a strong social incentive for trying to maximize the productivity of cows. For many households it is seen as a social responsibility to share their surplus with others.

A case in point is Batangan (Box 4.8), where within each of the four *biradaris* systems of collaboration and mutual support were well developed. Milk was shared either on a mutual basis of helping each other out when a particular cow is temporarily dry, or as welfare given daily to neighbours who do not have milking animals. In Jhangri (Saidpur UC), not only was the milk shared, but the effort of caring for the animals as well. In many households, the yard for animals was shared between two or more households from the same family. Feeding and cleaning the whole herd was a shared responsibility. This institutionalised way of spreading the benefits from one cow clearly contributed to the success the



livestock intervention showed in those two villages. In Botha and Rajpian, in contrast, it was found that those interviewees who did not own milk giving livestock had to purchase the milk they consumed.

**Box 4.8: Batangan (Kahori UC)**

Number of households: 120		The GRC/ICRC cow donation was reported as being the only reconstruction aid that the village of Batangan received. The project showed good results with about 75% of the cows still being with the original beneficiary. All cows viewed during the survey were very well kept.
Altitude: 1,032m		
Distance to next market: 25 min driving to Pattika		
Date of distribution: 17.09.2007		
Status of cows in Batangan		
<u>Number of cows:</u>		
Distributed	29	Another reason for the positive results of the project might be that milk is shared throughout social networks, strengthening social cohesion. This is also evident through the strong degrees of cooperation in agriculture.
With beneficiary	18	
Exchanged for buffalo	2	
Sold	5	
Died in accident	2	
Died because of sickness or deficits in care	2	
<u>Calves (GRC/ICRC-distributed and new-born)</u>		
	17	

Source: Village survey by ZELF evaluation team 2009

Another factor influencing the performance of villages was the need for aid. Botha has been hit exceptionally hard by the earthquake, and people in Batangan barely received any aid for reconstruction. In Rajpian and Basankot (Box 4.5 above), in contrast, reconstruction rate is rather high, and both villages focused on important other reconstruction projects: the rehabilitation of the local market and reconstruction of the irrigation system, respectively.

Thus, the way and intensity of utilisation of livestock, and the number of households that benefit from the cow donation depend on economical and social patterns which differ from village to village. In those villages that have clearly defined patterns as to how they utilise the milk - be it by sharing with the extended family or by selling it to customers in the city - and in those places in greatest need of aid, the GRC/ICRC restocking project yielded the biggest success.

Overall, however, the majority of donated cows are still present with original beneficiaries or have been exchanged into higher valued livestock, so that three years after implementation the project can be judged as successful. When looking at the in-depth household level survey in the following chapter, the variety apparent at the village level also characterises project outcomes across individual households, making it difficult to arrive at

unanimous conclusions. However, certain patterns can be observed. A major focus in the household analysis is thereby directed at some problematic issues of the restocking programme that led a number of households to dispose of their donated cow.

### 4.3 At the household level: how the donation is utilised

Following the analysis of the cow's attributions to the village economy it is important to assess the impact of the livestock package for the livelihoods of individual households. The beneficiary households are embedded in a village economy, in a specific rural setting, but at the same time their respective asset-bases vary quite significantly. Consequently, it is the specific aim of this chapter to identify the attribution of the livestock package to household welfare over time.

In the previous section, village-specific factors (e.g. access to markets) have been presented that are leading to a broad spectrum of village performances. The same holds true for study households, where different ways of utilising the donated cow can be observed, with differing impacts on the household economy. The specific setup of a household's economy is crucial for decisions related to the keeping and utilisation of the donated cow. In addition, household structure and composition as well as available knowledge and skills are important factors to consider when assessing the impact of the livestock donation on household economies. This assessment is done on the basis of 100 household interviews and structured as follows:

- Characteristics of the study households are presented.
- Household-specific determinants influencing the present status of the cows are examined by addressing the following questions: What were the household-specific causes that led to the loss of the donated cow? Which factors influenced the decision to sell, slaughter or exchange the cow with a local breed or a water buffalo?
- The broad variety of cow care and cow utilisation in the study households are presented and analysed.

#### 4.3.1 Household composition and economical contexts - characteristics of study households

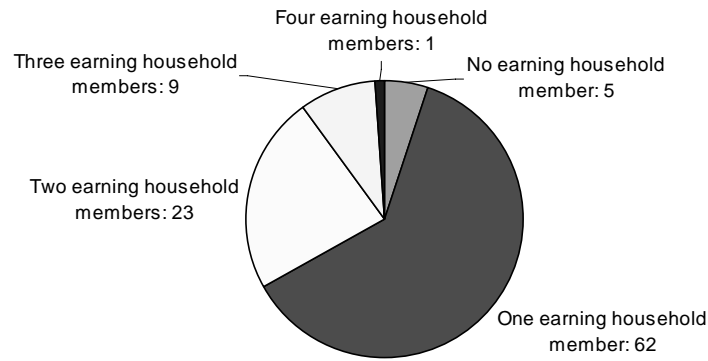
A vast array of different household structures and compositions was encountered among the interviewed households. While some households consist of two members only, others are comprised of as many as 19 members. With the definition of a household that is composed of an economic unit sharing a kitchen, there is an average of six to seven members per household in the sample. The mean age of the members belonging to a household was 21.8 years, while on average each household had two to three persons below 13 years of age.

All but six households in the sample have access to electricity within their house. Access to drinking water is remarkably good as well: 73 households had their own tap, 22 shared one tap with neighbours, one household had its own well, and only two households had to take their water from a nearby river. For two households, there was no information about water access available. Regarding hygienic assets, 62 households had their own water-flush toilet, 17 had a dry latrine. Nine households shared a toilet with neighbours, while nine used open spaces for their sanitary needs. These figures show that reconstruction after the earthquake had progressed quite well, with a majority of mountain households today having access to basic amenities.

Thirty-seven households lost at least one member due to the earthquake and many more household members acquired injuries with longer-lasting effects on the workforce available within the houses. Damage among houses afforded in almost all cases the rebuilding of new habitations. Only two households did not have to rebuild their house. All households except one received government compensation for earthquake-related casualties and/or for rebuilding the house, which across the board was perceived as the most important relief aid obtained. This is because people stopped working after the earthquake to stay with their families in the villages, and many households would not have had the means to cope with the crisis without the compensation money. However, at least four of the households had not received the latest instalment yet.

Out of the 100 interviewed households, 95 had at least one household member earning cash money, predominantly generated from off-farm work. This response underlines the critical importance of off-farm labour for rural livelihoods which only partly depend on agriculture. In 34 cases, two or more household members were engaged in remunerated labour (Figure 4.8). In twelve cases, women contributed to the monetary income, mostly through home-based work activities. In eight households, one member was having two different income-generating jobs; nine households were gaining money from a pension of one household member.

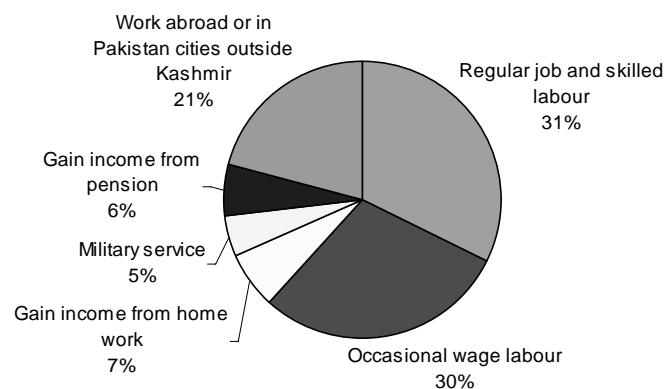
Among the surveyed households there were 142 members engaged in activities for cash-income. Thirty-one percent were doing skilled labour or regular jobs like teacher or working in an office, while 30 percent were engaged in occasional work activities, e.g. on house- or road construction sites. About seven percent derived cash-income from home-based work like selling milk, hay, or goats. Five percent were doing military service, while six percent were gaining regular money through their pension.



Source: Household survey by ZELF evaluation team 2009, N=100

**Figure 4.8: Engagement of household members in income-generating jobs**

About one fifth (a total of 30 members of the studied households) were working abroad or in cities of Pakistan outside Kashmir, signifying the importance of labour migration (Figure 4.9). As such, remittances sent by migrant workers were an important economic factor for the study households. Twenty-seven of the beneficiary households had at least one member sending remittances on a regular basis. Out of these, ten were getting money from one or two (in one case even three) members working as skilled or unskilled labourers in the Gulf States. The remaining 17 households had one or two household members working in one of the three cities of Karachi, Lahore, or Islamabad or doing military service.



Source: Household survey by ZELF evaluation team 2009, N=142

**Figure 4.9: Occupational variation of income-generating among household members**

These occupational activities translate into varying amounts of cash available for the households. On average, the monthly income ranges around 9,122 PKR per household in wide spectrum, with a minimum of no cash income at all in households without a single income earner and a maximum of 67,000 PKR. More meaningful figures can be derived

when looking at the actual per capita incomes in the households. The average money available per present household member, that is without counting the contribution of migrant labour, was 1,422 PKR, with a range from no income at all to a maximum of 8,000 PKR. The standard deviation is very high for both the household income and the mean income per present household member, indicating that there is large variation of the financial situation between households (Table 4.6). In both cases it becomes obvious that the majority of households are close to the lower end while the maximum income figures are limited to a few respondents.

Table 4.6: Monthly income and expenditures (in PKR)

	Average	Minimum	Maximum	Standard deviation	N
Household income	9122	0	67000	8776	100
Financial means available per present household member	1427	0	8000	1213	100
Household expenditures	9541	1000	30000	5988	86
Mean expenditures per present household member	1524	167	5400	949	86

Source: Household survey by ZELF evaluation team 2009, N=100; 1 Euro ~ 100 PKR

The monthly expenditures, in turn, were slightly higher than the monthly household income with an average of 9,541 PKR per household and 1,524 PKR per capita (Table 4.6). The difference underlines the cash needs of households that are sometimes bridged by accessing credit schemes: four households reported pending debts with a bank, and 57 households were taking informal loans from relatives, neighbours, or shopkeepers. Some households were still augmenting their daily expenses with the government compensation money they had received for earthquake-related casualties and for rebuilding their houses.

It is noticeable that there is huge variation of the mean per capita expenditures, with a minimum of 167 PKR, a maximum of 5,400 PKR, and a standard deviation of 951 PKR (Table 4.6). The significant variation is due to the fact that some households are forced to subsist on their own crops for most of the year, while for others the food budgets make up the biggest share of monthly expenditures. Another factor leading to the big variety of expenditures is transportation, for which costs differ greatly among households, depending on distances to markets and the spatial activity range of household members. Other major expenditures reported in the interviews were education fees for children, basic non-food items, and - very importantly - additional fodder costs for the donated cow (see details below).

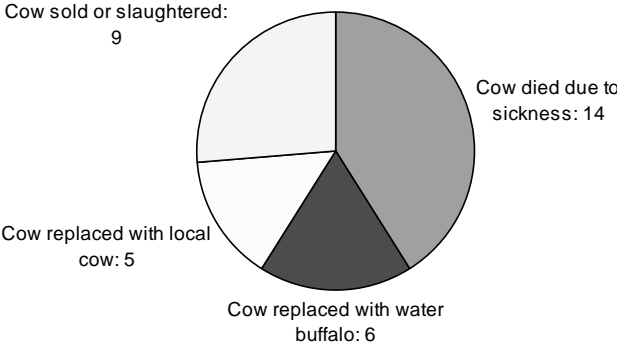
In conclusion it can be stated that most of the studied households have been engaged in small-scale farming and animal husbandry. At the same time all of them have been substantially depending on monetary income derived from off-farm labour activities. A nota-

ble share of the households is supported by absent members working abroad or in the big cities outside Kashmir. Respondents related that this share of migrant labour was even higher before the earthquake. The importance of off-farm income for rural livelihoods has to be kept in mind when analysing the contribution of the livestock programme to the wealth of the households: the cow represents one important asset contributing to the household economy, but seems not to be the most critical one.

### 4.3.2 Household-specific factors determining the status of the donated COWS

In the household sample, the percentage of cows disposed of differs significantly from the figures derived from the broader village survey based on a sample of 1,238 donated cows: out of the 100 interviewed beneficiary households, 66 still had the cow donated by the GRC/ICRC, while only in 34 cases the cow was not present anymore.

When taking a closer look at the one third of cases where the cow was not with the beneficiary household anymore, it is observed that 14 of these cows perished because of sickness, nine were sold or slaughtered, while six were exchanged for a water buffalo and five were replaced with a local cow (Figure 4.10).



Source: Household survey by ZELF evaluation team 2009, N=34

Figure 4.10: Reasons for the loss of the donated cow

Most of the donated cows were with calves at the time of distribution. Only 35 out of the 99 donated calves in the study households were still with the beneficiary household, with most of them having died due to illness. However, there is evidence that some of these calves were slaughtered or intentionally not cared for properly, as households either did not have the capacity to raise the calves, or did not value them as a future investment, as especially was the case for many donated male calves.

The reasons for disposing of the donated cow and the reasons why so many animals perished need to be analysed in their relationship with additional household's characteristics. It is assumed that for keeping and maintaining the donated cow, a household must have sufficient livestock-related resources. The most important are the following:

- Financial means to meet the high fodder demands of the *Punjabi* cows and to pay for regular investments into animal health-care and veterinarian services and medicines in case of severe sickness.
- Access to grazing land for supplementing fodder supply.
- Availability of labour to perform the cow-related work, i.e., buying fodder, cutting and transporting grass, feeding and milking the cow, and maintaining the shelter.

The availability of these resources in the respondent's households has been identified through proxy indicators. These indicators are presented in Table 4.7, showing indicator values calculated for different status categories of the donated cows.

Taking a closer look at the factor *household income*, it becomes obvious that households that were able to keep the donated cow are to be found in the category with the highest income. Thus, it can be argued that a household's financial situation is an important condition for being able to maintain the cow and to be able to afford the high fodder expenses.

On the other hand, the households that replaced the donated cow with a higher valued water buffalo belong to the group with comparatively low household incomes. Given the fact that expenditures for a water buffalo are even higher than those required for the up-keep of a Punjabi cow the financial situation alone cannot be seen as the crucial factor determining the present cow status in this household sample. The same holds true when looking at the mean per capita income (Table 4.7).

Remarkably, those households that do not have the cow anymore and did not exchange it for a new milking animal are at the same time very likely to have debts: 75% of the households belonging to the category *cow died due to sickness* and 78% of those whose cow was sold or slaughtered were taking credit (Table 4.7).

Table 4.7: mean values/percentages of household-specific factors per cow status category

	All benefi- ciary households	Cow still with benefi- ciary	Cow died due to sick- ness	Cow re- placed with water buf- falo	Cow re- placed with local cow	Cow sold or slaughtered due to other reasons
Household income (in PKR)	9149	9950	7479	7166	8400	7611
Financial means available per pre- sent household member (in PKR)	1427	1494	1236	1126	1237	1535
Own grazing land (in kanal)	6.2	6.3	3.5	1.6	10.9	10.4
Taking credit	59%	54%	79%	50%	40%	78%
Number of house- hold members	7.0	7.3	6.6	6.2	7.2	5.4
Number of kids from 13 to 16 plus fe- males over 16	3.5	3.7	2.9	2.8	4.0	3.0
Number of house- holds	100	66	14	6	5	9

Source: Household survey by ZELF evaluation team 2009

This seems to indicate that indebtedness and the need to repay credit puts pressure on beneficiary households and might lead them to cut down expenditures on cow fodder and animal health care, resulting in higher cow morbidity.

While households that exchanged the cow with a buffalo have only an average of 1.6 *kanal* of grazing land, those that exchanged it with a local cow possess 10.9 *kanal*. These figures represent engagement in different farming systems: households that keep water buffaloes mostly live in relatively lower and less remotely located villages. Access to bigger pastures is more common in areas of high elevation, where people thus prefer to keep local cows that are able to freely graze on their land. Also because it is very strenuous and time-consuming to cut grass and bring it to the immobile *Punjabi* cows, households that own large areas of grazing land naturally prefer to keep a local cow.

In order to determine to what degree the availability of household-labour influences the cow status, a variable representing the number of household members expected to do the main share of cow-related work was constructed: the *number of females over 16 and teenagers from 13 to 16*. Although there are no strong trends evident, it can be observed that the households belonging to the categories *cow died due to sickness* and *cow sold or slaughtered due to other reasons* have a relatively low number of these household members: 2.9 for the former category and 3.0 for the latter, compared to an average of 3.5 in



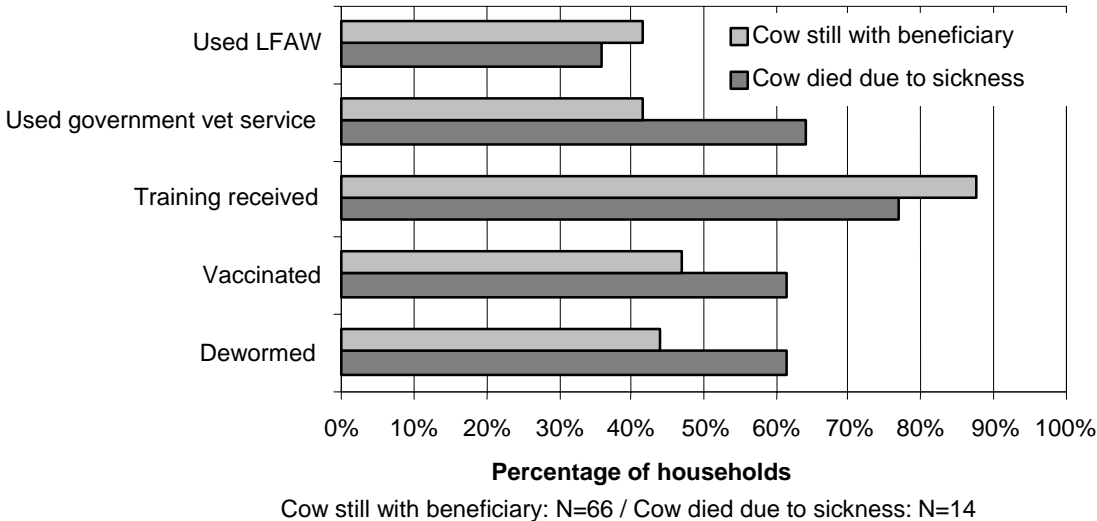
the overall sample (Table 4.7). This indicates that the more household members are available to take care of the cow, the better is the household performance (measured through the fact that the donated cow is still present). This finding can however not be regarded as a general rule: the low number of 2.8 in the group *cow replaced with water buffalo* contradicts this trend, since it is assumed that a buffalo requires at least the same workload as a local or *Punjabi* cow.

For further exploration of potential causes for the variation in cow mortality, the effect of additional factors on the two categories *cow still with beneficiary* and *cow died due to sickness* was analysed. One influential factor on cow mortality is obvious: the time of donation. In the household sample, 53 out of 100 cows were donated in 2006 and 47 in 2007. From the cows donated in 2006, 18.9 percent (10 cows) died due to sickness, while 62.3 percent (33 cows) are still with the beneficiary household. The percentage of the perished cows from the 2007 donation is remarkably lower: 8.5 percent (4 cows) died due to sickness, while 70.5 percent (33 cows) are still with the beneficiary household. The reason for these proportions seems clear: the longer a cow is kept, the higher is the risk of it getting sick.

In Figure 4.11, indicators for the application of animal health care are presented for the two categories *cow still with beneficiary* and *cow died due to sickness*. It can be noticed that of the cows that are still with the beneficiary household, about 41 percent have been treated by the LFAW, and also about 41 percent have been treated by the government veterinarian (vet) service of the Department of Animal Husbandry. Looking at the cows that died due to sickness, only 36 percent were treated by the LFAW but 64 percent by the government vet service. One could assume that this is because the work of LFAWs is more effective in curing the cow. However, it is more plausible that in cases where the cow fell seriously sick, beneficiary households used the government veterinarians because they had more confidence in them.

Another potential factor influencing cow mortality is the household-specific knowledge about cow-keeping. The number of study households that received the beneficiary training was used as an indicator for available knowledge about cow maintenance. By way of using this proxy indicator it can be concluded that the percentage is higher for those households where the cow is still present. While the average in the whole sample is 82 percent, 88 percent of the households where the cow is still present received the training, compared to 77 percent where the cow died due to sickness. Altogether, there were 14 beneficiary households that did not receive the training. Out of these, eight still had the donated cow while in three cases the cow died due to sickness (in the other three cases the donated cow was sold or slaughtered). Three households from these 14 belonged to List B, so they were neither trained nor were they already experienced with cow-keeping. However, two of these inexperienced beneficiary households still kept the donated cow, while the third

used the cow as a cashbox and sold it right after distribution to invest the money in re-building the house.



Source: Household survey by ZELF evaluation team 2009

Figure 4.11: Percentage of different factors comparing present and perished cows

To further observe if experience with taking care of cows determines a good health condition the category *beneficiary List B* was used as an indicator. This list represents the beneficiary households that did not have any milking animal (cows or buffaloes) before the earthquake. There is a remarkable difference in cow mortality using this indicator: while about 27.3 percent of the cows still present are with households belonging to List B (18 out of 66), only one of the 14 perished cows belonged to households from this list. Thus, it can not be assumed that experience is a condition for good animal health. On the contrary, the positive results for the beneficiaries from List B indicates that households that did not have livestock before valued the donation more than others.<sup>6</sup>

All study households were asked how often they dewormed and vaccinated their cows. When comparing the households that still had the cow with those where the cow perished, the percentages are higher for the latter category (Figure 4.11). These numbers can however not be taken for granted: it was felt that those households where the cow died due to sickness did not always admit that they missed deworming or vaccinating their cow. However, an experienced veterinarian is able to see at one glance if deworming took place or not, and an ICRC veterinarian joining the field teams on various occasions confirmed that the practice of deworming had been neglected by many households.

<sup>6</sup> While there are 25 beneficiaries from List B in the sample of 100, the proportions in the remaining categories are: two out of six households that exchanged the cow with a buffalo were from List B, as well as three out of four that exchanged it with a local cow, and two out of nine that slaughtered or sold the cow.

Nevertheless, the indicator values revealed that above all it is the sufficient availability of financial means and agricultural labour force in a household that determines the status of the donated cow. The higher the availability of these resources, the less likely the donated cow is prone to perish because of sickness or to be sold or slaughtered. These issues will be further discussed in Section 4.4.

### 4.3.3 Animal health care, (re-)production, and utilisation of milk

In order to evaluate the impact of the donation on the study households as well as the importance of the cow for rural livelihoods, this section focuses on the multiple aspects of cow-keeping and milk utilisation. Therefore, the focus is directed on the cow-related performance of the 66 households that still have their donated cow. Further, aspects regarding the performance of those households that exchanged the donated cow with a water buffalo or a cow for a local breed will be discussed.

#### (i) Animal health care

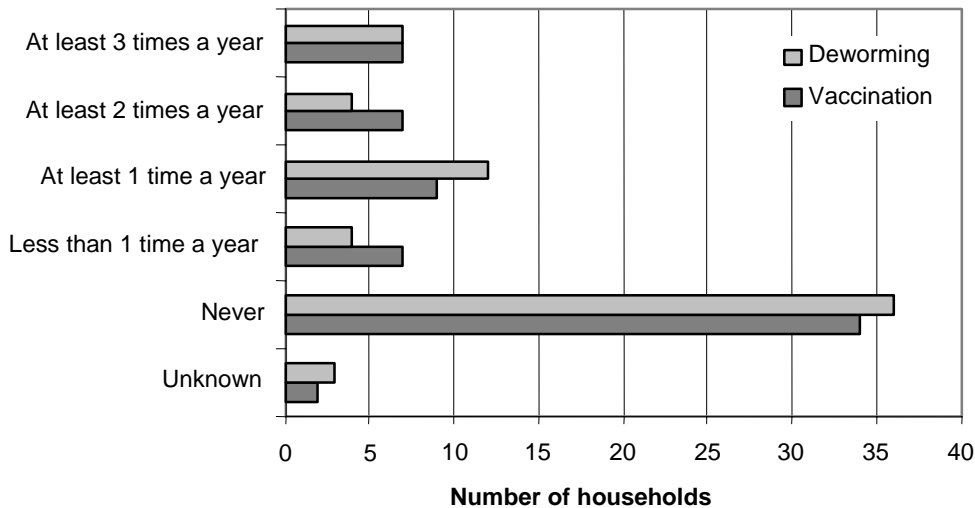
Out of 66 households where the donated cow is still present, 41.5 percent (27 households) have already used the LFAW service to treat their cow; an equal number used the government veterinarian service. Only 16.7 percent (eleven households) were not using either yet, and for one household no data is available. The mean expenditure on veterinarian services for the donated cows was 869 PKR, with a range up to 5,000 PKR.<sup>7</sup>

Figure 4.12 shows the frequency of vaccination/deworming in the 66 relevant cases. Vaccination and deworming strongly correlate with one another; households that vaccinated the cow regularly are likely to deworm the cow on a regular basis as well. As already mentioned, an overall poor performance with regard to animal health care was evidenced. Although beneficiaries were trained to deworm and vaccinate their cow regularly, the vast majority did not apply animal health care measures at all.

One probable reason for this poor performance is the lack of awareness in beneficiary households. Several households were not aware that vaccination and deworming are preventive measures: they only do it "*if necessary*", it was stated that there was "*no need so far*". One household vaccinated its cow just once because it had ticks. Other households did not believe that it was necessary to vaccinate or deworm the cow. One interview partner said "*we do not apply it, we prefer the traditional way*".

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<sup>7</sup> For those households where the cow died due to sickness these figures are higher: An average of 1,736 Rs has been spent on veterinarian service, with a maximum of 4,000 PKR.



Source: Household survey by ZELF evaluation team 2009, N=100

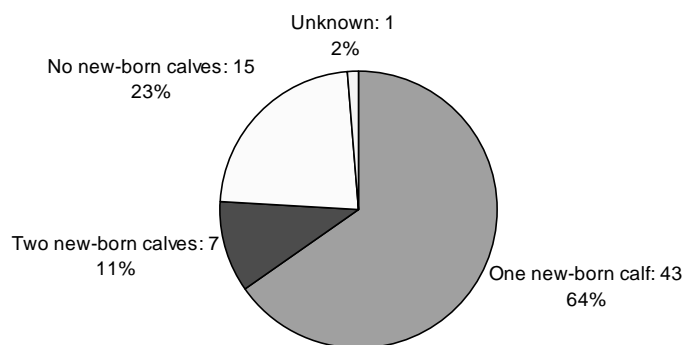
Figure 4.12: Frequency of vaccination and deworming of cows still with beneficiary

However apart from these household-specific determinants, there are other constraints limiting household performance with regard to cow vaccination and deworming: although households were trained to apply the measures by themselves, in most cases it was done by the LFAW or the government vet service. For instance in the village of Batlian, a veterinary from the Department of Animal Husbandry was supposed to visit the village regularly to provide free deworming and vaccination services. One household complained that because their residence is located remotely within the village, the vet did not visit their house and provide the service to them. One beneficiary complained that the vaccination and deworming was too expensive, despite the fact that the medicine is available for a very low price. It is possible that the government veterinarians and/or LFAWs are overcharging the beneficiary households.

Overall, however, it must be inferred that the beneficiary training provided by the GRC/ICRC did not achieve the expected results. One reason might have been the fact, that the training was overwhelmingly received by men, whereas women are responsible for most cow-related activities in the household (cf. Section 4.3.4). However, for cultural reasons the implementing organisation decided to proceed in spite of better knowledge.

#### (ii) Cow reproduction

When looking at the reproduction rate of the 66 donated cows that are still with the studied beneficiary households, it can be observed that 64 percent of the cows have already given birth to one calf since the donation, and eleven percent have birthed two calves. Twenty-three percent of the cows have not given birth yet (Figure 4.13). Fifteen cows were, however, currently pregnant at the time of the evaluation. Also one out of the six buffaloes and two out of the five local cows that had been exchanged with donated cows were pregnant at the time of field research.



Source: Household survey by ZELF evaluation team 2009, N=66

**Figure 4.13: Number of new-born calves per household where donated cow is still present**

These results appear to be very positive, but are not based on the effects of artificial insemination. Out of the 57 beneficiary cows that were either pregnant or have given birth to a new calf since donation, only eight were inseminated by an AIT. This clearly indicates a preference for breeding with local bulls, as they inseminated 86 percent of these cows.



Photo: Spies, March 2009

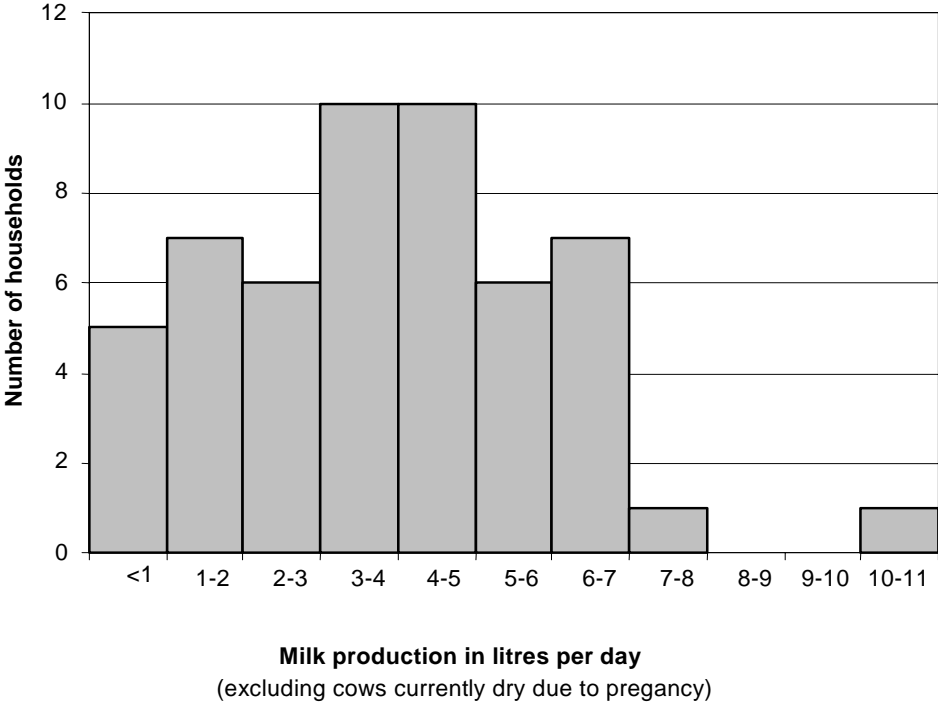
**Figure 4.14: Donated cow with new-born calf in Sangri Mugnar, UC Saidpur**

One issue leading to this preference is the low success rate for AITs - most artificial inseminations apparently do not lead to a pregnancy. This is also exemplified by donated

cows that have never become pregnant, as those cows have been overwhelmingly treated by AITs. Altogether AITs are not often called-for, which in part is due to the lack of their availability and the relatively high costs, and in part because people did not trust the new breeding technique and thus preferred the traditional way.

**(iii) Milk production**

As mentioned above, out of the 66 cows, 15 were currently pregnant; as a result, twelve of them had gone dry already and stopped giving milk.<sup>8</sup> Figure 4.15 shows the wide range of milk yields from donated cows. The mean milk production of the remaining 52 cows<sup>9</sup> was 3.4 litres per day, with a maximum of 10 litres.



Source: Household survey by ZELF evaluation team 2009, N=52

**Figure 4.15: Variation in milk production of donated cows still with beneficiary**

Out of the six water buffaloes that were with the beneficiary households, five were currently giving milk and one was dry due to pregnancy. The milk production of the five water buffaloes was higher than of the donated cows, with a mean of 5.8 litres, a minimum of 3 litres and a maximum of 11 litres per day. Two of the five local cows that were with the beneficiary households were pregnant and currently dry, but two gave three, and one gave 1.5 litres of milk per day.

<sup>8</sup> Three of the pregnant cows were still lactating. One gave just one litre per day, while the other two gave three and six litres respectively.

<sup>9</sup> This figure excludes two cows where data of milk production could not be obtained.

Generally, it can be assumed that for good milk production, the donated cows have to be fed properly and dewormed regularly. To keep the milk production at a constantly high level, it is also necessary that a cow becomes pregnant on a regular basis. These indicators that can cause variances in milk production in the study households have been tested. However, it has to be considered that cows have a natural lactation period with a rise in milk production after giving birth followed by a gradual decrease before going dry. Therefore, the broad spectrum of milk production as shown in Figure 4.17 is not very surprising, as the cows are at different stages of their lactation period.

Figure 4.16 shows the average milk production of the donated cows related to the number of calves they gave birth to since the donation. As expected, the cows that gave birth to one or two calves have a significantly higher milk production, with 3.75 or 3.5 litres per day compared to 2.25 for other cows.



Source: Household survey by ZELF evaluation team 2009, N=52

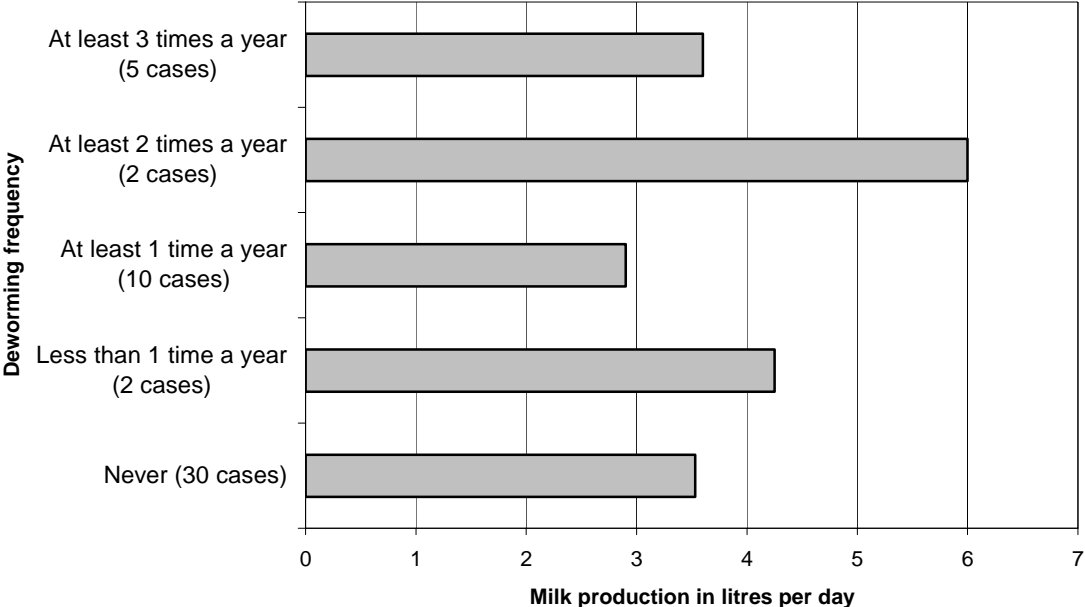
Figure 4.16: Average milk production and number of new-born calves

The insemination through an AIT rather than a local breeding bull leads to a higher milk production of the cow after giving birth. This general rule is also underlined by the household data: the average daily milk production of those cows that gave birth to a calf through insemination with a local breeding bull (34 in total) is 3.6 litres, while those where the AI service was used (six cows) give an average of 4.4 litres per day.<sup>10</sup> Thus, it can be stated that usage of AI service not only leads to a high quality of breed, but also to an improvement of milk production.

It was tested if there is an observable influence of the frequency of deworming on milk production, but no relationship was detected. As shown in Figure 4.17, those households that dewormed their cow at least three times per year, as recommended, did not have the highest milk production. The production quantity of these cows is only slightly higher than of those cows that were not dewormed at all since the donation (3.6 compared to 3.5 litres

<sup>10</sup> Cows that were pregnant at the time of field research are excluded from these figures.

per day). The two households that dewormed their cows at least two times per year received a remarkably high amount of milk per day. However, since these figures are based on a relatively low number of observed cases, it is presumed that other factors, especially the natural lactation period, are causing the high levels of production shown in Figure 4.17.



Source: Household survey by ZELF evaluation team 2009, N=52

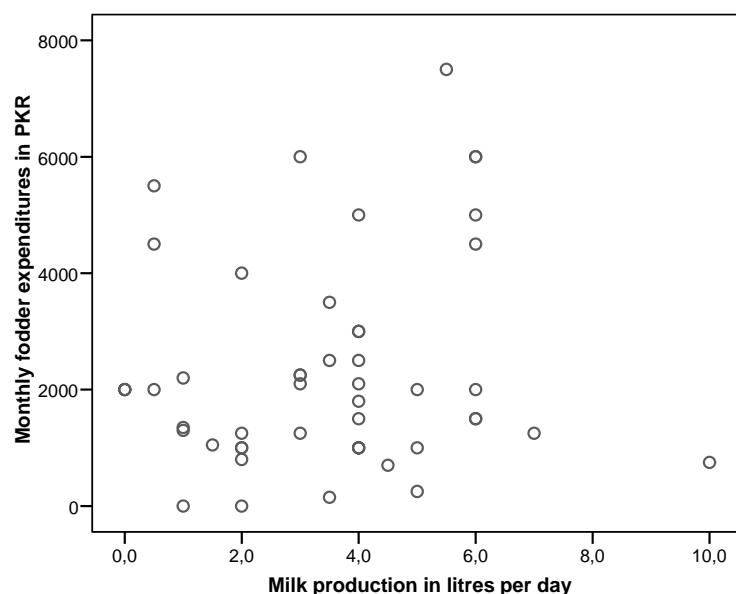
Figure 4.17: Deworming frequency and milk production of cows

It was assumed that the quality and quantity of the fodder fed to a cow plays a determining role in the production of milk, and the monthly fodder expenditures for the donated cows were used as a proxy indicator for quality and quantity.

In a scatter plot (Figure 4.18), no significant trends can be observed, as there is very high dispersion and obviously no significant correlation between fodder expenditures and milk yields. The mean fodder expenditures alone are thus no good indicator for the proper feeding of the cows, as people are able to save money through feeding their cow with cut grass from their own or public grazing land. Fifty-two out of the 65 households, who still have their donated cow purchase fodder from the market while 57 use fodder that is grown on their own land.<sup>11</sup> Another important factor is the access to fodder markets, resulting in the observation that households that had to use public transport to buy higher nutritional fodder from an external market were less likely to feed their animal properly than those households that could purchase fodder within the village.

<sup>11</sup> Only three households get fodder from communal land.





Source: Household survey by ZELF evaluation team 2009, N=46

Figure 4.18: Variance in fodder expenditures and milk production

#### (i) Utilisation of milk

Apart from the milk production per day, the beneficiary households were asked how much milk they consume within the household and how they utilise available milk surplus. As shown in Table 4.8, there is an average of 1.2 litres per day of milk surplus in the households with milking animals, excluding those households with cows or buffaloes that are currently dry.

The highest milk surplus with 2.2 litres is in households that exchanged their cow with a water buffalo, and the two households that have a local cow currently lactating do not have any milk surplus. The households where the donated cow is still present and lactating have an average of 1.1 litres of milk surplus per day. Twenty-one out of these 52 beneficiary households consume all of the milk within the household and do not have any surplus at all, which is a share of 40.4 percent.

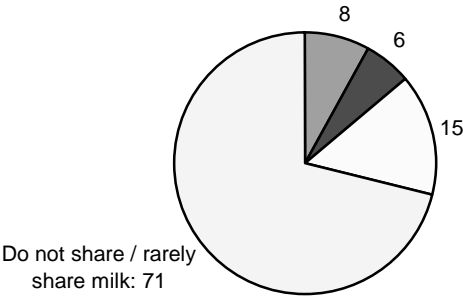
Table 4.8: Average milk production, consumption and surplus in beneficiary households

	Cows still with beneficiary	Buffaloes	Local cow	All
Milk production	3.5	5.8	2.5	3.6
Milk consumption	2.4	3.6	2.5	2.5
Milk surplus	1.1	2.2	0	1.2
Number of cows / buffaloes	52	5	3	60

All numbers are mean values in litres per day; households where the respective animal was currently dry due to pregnancy were excluded from calculation

Source: Household survey by ZELF evaluation team 2009

Fourteen households with available milk surplus engage in marketing activities and sell milk. Out of these, six also share some milk with relatives and neighbours (Figure 4.19). The others share milk and produce dairy products for longer-lasting consumption. While 21 households explicitly stated that they regularly share the milk surplus, others said that they would donate milk to others only in times of shortage. Whereas most of the milk is consumed directly in tea or given to children with bread, 36 households additionally produce dairy products, such as butter, ghee, yoghurt, and lassi.



Source: Household survey by ZELF evaluation team 2009, N=100

Figure 4.19: Utilisation of milk surplus in study households

(ii) Selling of milk

Enabling households to enter milk markets and generate cash income was one of the stated goals of the GRC/ICRC restocking project. This succeeded to some degree, and the factors leading to this success in 14 of the study households are examined in more detail below.

- One indicator for success is the capability to exchange the cow into a water buffalo with its significantly higher milk production - this was the case for three households who in this way were able to generate sufficient surplus for the marketing of milk.
- Generally, all households engaged in the cash marketing of milk have a relatively high milk production - the average was 5.5 litres per day, with a minimum of 4 and a maximum of 11. The high variation in milk surplus largely depended on respective household structures: those with higher numbers of children under the age of twelve have a lower milk surplus, as a big share of the milk is used for their nutrition. One reason for this high productivity can be found in the feeding practices: in households where the donated cow was still with the beneficiary, the average money spent on fodder was 2,922 PKR per month for the milk-selling households. The other households that still have the *Punjabi* cow spent an average of 2,226 PKR on fodder per month. Additionally, the reproduction rate is higher for the cows in the milk-selling households with a mean number of new-born calves of 1.18, while those donated cows that are still with the beneficiary households but do not produce milk for the market, gave birth to an average of 0.81 calves.

#### Box 4.9: Two case studies of milk-selling households

##### *Case study 1: Batangan - successful milk marketing*

This household is managed by a widow who lost her husband in the earthquake. She has to care for five children and her mother-in-law. The woman gets 1,500 PKR pension per month and earns 2,400 PKR by selling two litres of milk daily. She gets 40 PKR per litre. Her brother-in-law brings the milk to a hotel in Pattika. Sometimes she also sells butter produced from her milk surplus. The additional money the household gets from selling milk does not cover the fodder expenses, as she has to spend 100 PKR per day on fodder for the cow. However, since the cow gives four litres per day, the household has two litres for its own consumption which covers their needs.

##### *Case study 2: Batlian - marketing milk but falling into debts*

This household consists of husband and wife, their four sons and daughters between the ages of 13 and 19, and five kids until the age of twelve. Before the earthquake, the head of the household was working in Rawalpindi as a fruit seller, earning about 7,000 PKR per month. Due to the earthquake he came back to the village to support his family and has a very small income of 1,500 PKR/month for maintaining the local water supply scheme.

The household did not have any livestock before the earthquake, but now they have a cow that gives four litres of milk daily. Half of the milk is consumed within the household, mostly by the children, and the remaining two litres are sold to relatives and neighbours. The price they get per litre is about 17 PKR, which is very low compared to the normal market price of about 40 PKR per litre on the market - the household only earns an additional 1,000 PKR per month from selling the milk surplus. The monthly income of 2,500 PKR is not covering the household expenses and the compensation money from the government ran out two or three months ago. The household now needs to take a loan from friends and a shopkeeper and has accumulated 20,000 PKR of debt already.

- Most important, however, is a household's access to markets that determines the success of milk marketing. Out of the 14 milk-selling households, six are located in the village of Botha, which has already been presented as a "dairy village" and where people are able to sell milk to restaurants or shops in Muzaffarabad (Box 4.9). The means to sell milk to regular customers that pay the market value is thus critical for success.
- Another important indicator refers to the social context of milk marketing. When selling to relatives or neighbours, quite often the market price cannot be charged (Box 4.9). Therefore, in certain cases social networks affect the economic performances of milk-selling. This is also a factor that possibly hinders the ability to sell milk in general. As social commitments between relatives and neighbours can be very strong, it might be difficult for a household to sell its milk surplus instead of sharing it. One example of this is presented in Box 4.10. However, it needs to be stressed that there are other, very positive effects resulting from the sharing of milk rather than selling it, such as immersion in social networks. As one respondent in the village of Batangan stated, "*Now that our cow is dry, we get milk from my sister-in-law. In exchange, she gets milk from us when her cow is dry*".

#### Box 4.10: Milk-sharing practices in the village of Choon, UC Noora Seri

An example of the fact that strong social cohesion prevents milk-selling practices is the village of Choon (UC Noora Seri). There appears to exist a high level of solidarity in the village and a milk sharing system is maintained by a large number of the villagers. *"Everyone helps each other when someone is in need, especially neighbours and relatives"* (Village elder in group discussion, March 21, 2009). If someone has a milk surplus it is given to people who are in need. This also provides evidence that non-beneficiaries profit indirectly from the GRC/ICRC restocking project.

In sum it can be stated that beneficiary households highly value the donated cow as it represents an important livelihood asset. There is evidence that the donated cows are inseminated regularly and that households invest a large share of their income in fodder. People appreciate the high milk production of the *Punjabi* cow and some households are even able to derive income through selling of milk. However, the appliance of proper health care appears to be weak. One reason for this gap seems to be an insufficient beneficiary training the results of which are examined in the following section.

#### 4.3.4 The beneficiary training

The beneficiary training was implemented to build the capacity of those beneficiaries who did not have any livestock experience before the earthquake (List B) and to provide further advice to the already experienced beneficiaries (List A).

The GRC/ICRC hoped that through this capacity building programme beneficiaries would be able to maintain the provided animals professionally and to diagnose and even treat minor diseases themselves. Along with the training a booklet was provided which explains in easily readable illustrations how the cow needs to be treated. In 53 percent of the households it was reported that this booklet is consulted occasionally, whereas 32 percent do not have the booklet anymore. Fifteen percent did not respond or did not know about it.

The household survey shows that the goal of providing every beneficiary with basic livestock training was nearly achieved. Eighty-two percent of the beneficiaries received the training, 14 percent did not and four percent of the respondents were not able to give an answer. A particular case was recorded for the village of Sangri Mugnar, where the training was aborted (Box 4.11).

The overall perception of the training was very good, and even the people who handled livestock before asserted that they had learned new and useful things. Useful topics put forward by the trainees was the identification of diseases and the importance of a proper and clean shelter as well as of a good diet for the cow and its calf. A villager of Batlian who possessed livestock before the earthquake, and therefore is experienced, said: *"The booklet helps a lot, because when my cow gets sick I can easily look onto the pictures and until now I have always been able to identify the kind of sickness my cow is suffering*

*from. So I know if I need to get help or if I can handle things on my own" (Farmer in Balian, Interview on March 20, 2009).*

#### Box 4.11: Aborted training in Sangri Mugnar

The village of Sangri Mugnar is located in the Saidpur UC and consists of about 200 households and 1,000 inhabitants. It is situated close to Saidpur village and easily accessible by car. The lower part of the village has an altitude of 1,140 m but the upper parts reach up to 1,700 m.

In Sangri Mugnar, 44 cows and 42 calves have been distributed. As in every other village, a beneficiary training was held, but unlike in other villages, this training was aborted. According to the participants of the focus group discussion problems arose between a number of attendees of the training and non-beneficiaries who were angry about not having been entitled to receive a cow. The GRC/ICRC team that conducted the training tried to proceed, but the quarrelling continued and the training needed to be cancelled.

This example shows the latent conflicts that have been fed through a project that could only provide a very limited number of people with a livestock donation. However, despite the abortion of the training the treatment of the animals in Sangri Mugnar is not significantly worse than in other places.

Apart from the mentioned positive perception of the training, however, the question remains what effect the training had in supporting beneficiaries for providing preventive animal health care. Findings presented in Sections 4.3.2 and 4.3.3 indicate that the overall effect of the training did not translate into improved practices of veterinary health care, as almost half of the surveyed beneficiaries did not de-worm or vaccinate their animal at all. Only nine percent were de-worming and vaccinating as recommended in the training. One main problem was that in very many cases the person who attended the training was not the one responsible for the caretaking in the household. Usually the male head of household participated in the training while women took care of the animals. This led to shortcomings as to how the contents of training were communicated inside the beneficiary household. Another major problem was that in spite of the beneficiaries' knowledge about which fodder is to be provided or what materials are needed for building a shelter, in many cases people could not afford to apply these measures. Thus, resource constraints very often kept people from proper maintenance of the donated cow.

#### 4.3.5 Ten major findings regarding household performance

The "top ten" findings derived from analysis of household data are summarized as follows:

1. The livelihoods of the study households depend heavily on off-farm income. The donated cow, in turn, represents one important asset contributing to the household economy, but it is not the most critical one.

2. The financial situation of a household affects the status of the high-bred *Punjabi* cow: households with a relatively low financial surplus are more likely to sell, slaughter or exchange the cow for a less demanding cow of local breed.
3. The availability of financial means also affects the mortality of the cows since the health status is determined by quantity and quality of fodder as well as by good animal health care.
4. The bigger the available agricultural workforce in the household, the less likely the donated cow is to die due to sickness or to be sold or slaughtered.
5. The awareness of “modern” animal health care is weak, as shown in the low frequency of deworming and vaccination. Therefore, the GRC/ICRC beneficiary training did not achieve the expected results.
6. Previous experience with livestock-keeping seems not to be a necessary pre-condition for good animal health: very positive results were recorded for the beneficiaries from List B. This indicates that households that did not own livestock before valued the cow donation more than others.
7. Most households try to achieve regular pregnancies to keep the milk production high. However, beneficiary households rarely apply AI and do not seem to be aware of the higher milk production resulting from this service.
8. The sharing of milk with relatives and neighbours is a common practice among the studied households. Therefore, there is a positive effect of the donation beyond the target households.
9. Fourteen percent of the study households gained financial benefits through the cow by selling milk. In these cases, the project impact can be seen as being sustainable, as this economic benefit helps cover the high fodder costs of the donated cow.
10. There are several factors hindering milk-selling practices of beneficiary households, most notably insufficient milk production, a lack of market access, and social constraints.

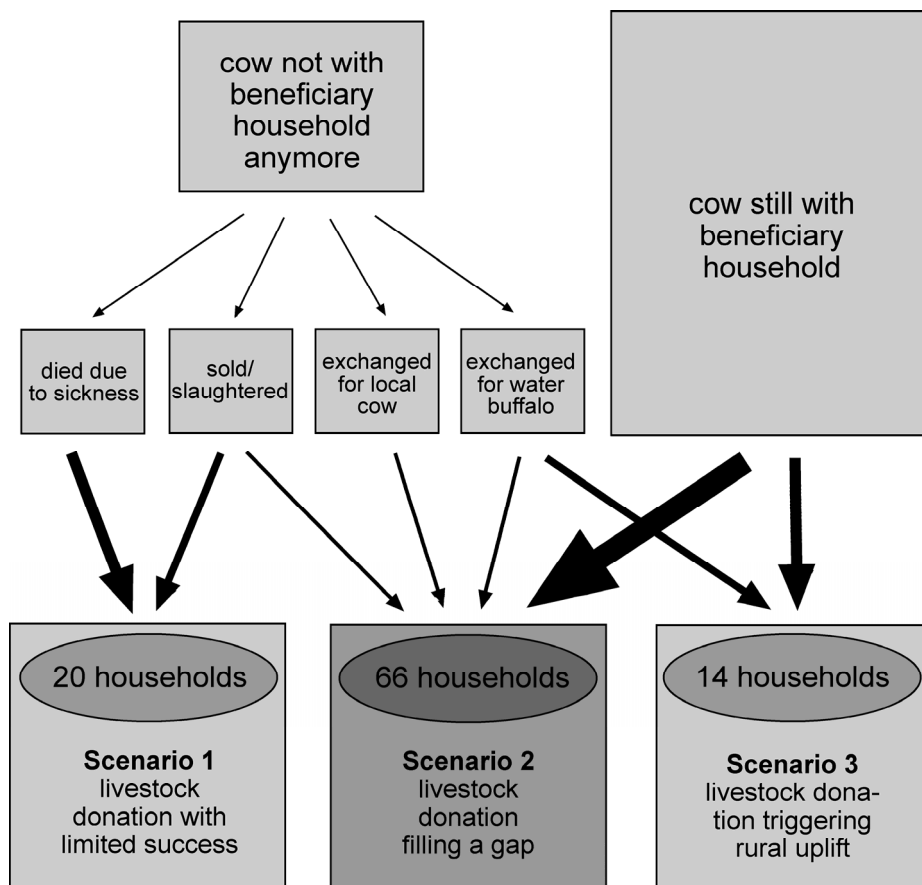
Based on the quantitative analysis, evidence about household-specific determinants has been extrapolated. These determinants represent the fundamental basis for the following section, where a typology of households representing different degrees of project success is established.

#### 4.4 How to handle a cow donation? Three household scenarios

To assess the determinants of success and failure of the GRC/ICRC livestock project at the household level it seems worthwhile to establish a household typology. This typology streamlines and synthesises the consolidated findings on different levels of analysis by isolating the factors that determined the performance of successful households and those that failed to handle the cow donation. Accordingly, three scenarios have been established:

- Household scenario 1 - *livestock donation with limited success*
- Household scenario 2 - *livestock donation filling a gap*
- Household scenario 3 - *livestock donation triggering rural uplift*

The overall goal of the GRC/ICRC restocking project was to contribute to the enhancement of household economic security for beneficiary households. Scenario one thereby represents cases where the project could barely achieve expected results, whereas scenarios two and three represent those cases where project goals were successfully reached and a stabilisation or an improvement of household economic security was supported. The latter two scenarios represent the majority of the study population (80%), indicating the overall success of the livestock restocking project. Nevertheless, the 20% of cases where the project showed very limited success can provide important insights for how to improve implementation in similar future projects and stresses the need for careful targeting. The distribution of study-households over the three scenarios is presented below (Figure 4.20).



Source: Design and Survey by ZELF evaluation team 2009

Figure 4.20: Scenario approach for the allocation of sample households

## Household scenario 1 - livestock donation with limited success

In 20 households the livestock donation did not achieve any lasting positive impact. Households of this scenario were without the donated cow at the time of enquiry. The reasons for this can be attributed to internal and external factors related to the households' status and performance.

*Internal reasons* for limited success were determined by weak asset-bases of particular households. The donation overburdened their capabilities as sufficient resources for the provision of animal fodder, for animal health care, and general maintenance of the donated cow could not be provided. These led households to quickly sell the cow and use the money for different purposes that were more highly valued or of urgent need. Two examples of overburdened households are presented below (Boxes 4.12 and 4.13).

*External reasons* for project failure are manifold and can be found in some technical weaknesses of the livestock programme, external threats or simply the bad luck of a beneficiary.

### Box 4.12: The cow as a burden for the household budget

A household with eleven members from List B in the village of Botha kept the donated cow and calf for six months until they were forced to sell it due to financial problems. The household simply could not afford the high payments for the special fodder needs of the Punjabi cow. As the head of household stated "*The cow was too demanding*".

Eventually, the cow got sick and had to be sold before it died. This occurred even though the household's income generated from off-farm activities is relatively high, with the per capita income being approx. 2,000 PKR per month. However, this household has moved from another village in PaK to Botha, where they do not possess any land and are not able to engage in agriculture, so that all food needs had to be paid for in cash. Monthly expenditures for cow maintenance thus ate up the entire cash income. The household now purchases milk from neighbours and pays 40 - 45 PKR per litre.

Source: Interview with household in Botha village, UC Nura Seri

### Box 4.13: Lack of household labour force to take care of the cow

This two-headed household from the village of Batlian was forced to sell the donated cow because it could not provide the labour force needed for its high maintenance. The household consisted of two siblings, and neither of them received the beneficiary training. The household belonged to List A, but the actual beneficiary entitled for selection moved away after the distribution, and therefore no one with livestock experience stayed in the household. Thus, the unfavourable household constellation led to the undesired project outcome. The two siblings were quickly overburdened with the demands of the cow, and the donated calf got sick and perished. The siblings decided to sell the animal for 27,000 PKR. The money was used to help covering the daily needs of this household.

Source: Interview with household in Batlian village, UC Nura Seri



Technical weaknesses of the livestock programme leading to limited project success were the following:

- The timing of distribution at the onset of the cold season.
- The distribution of cows to beneficiaries who did not completely fulfil the selection criteria, e.g. to those who had not installed a proper shelter (Box 4.14), those who had not attended the beneficiary training, or those who were not eligible according to the previously defined rules of distribution (Box 4.15). The latter example represents a failure of targeting that besides all care and transparency could not be avoided in all cases.

**Box 4.14: Proper shelter has not been installed**

The example of an eight-headed household from the village of Basankot represents a case where the project could not achieve its goals because the beneficiary had not constructed a shelter for the cow, and the animal subsequently perished from pneumonia in the winter. Additionally, the donated calf did not make it through the cold season. Unfortunately, this household example was not an exception in Basankot, and many donated cows were met by the same fate. However, distribution for Basankot occurred in October and many villagers blamed the timing as being the reason for the poor project performance in that particular village.

Source: Interview with household in Basankot village, UC Nura Seri

**Box 4.15: Failure of targeting: when the cow is not appreciated and not taken care of**

This household from the village of Dhaman Jhol was comparatively affluent and had sufficient resources under their command for maintaining livestock, but the donated cow nevertheless perished. The household was from List A and therefore had prior livestock experience. It also owned 19 *kanal* of agricultural and grazing land and thus had a sufficient labour force. Still, the cow donation was not appreciated, presumably because of the wealthy status of the household and its economical independence from the cow. This was also why no animal health care measures were applied at all and no proper shelter was installed. The household just did not bother, and let the cow perish in its first mountain winter. The case exemplifies the importance of proper beneficiary targeting. The relative affluence of this household did not qualify it for project participation in the first place, as did the fact that proper shelter had not been constructed.

Source: Interview with household in Dhaman Jhol village, UC Nura Seri

External threats that occurred and led to project failures in spite of favourable household conditions and the provision of basic animal health care were the following:

- The cow was taken care of but was weak from the beginning and caught a serious illness in the harsher mountain climate and perished (Box 4.16). This happened on

twelve occasions in the study sample, although four out of these households still managed to sell the cow.

- The cow was aggressive and could not be tamed. This happened on two occasions, thus the cow was sold to a butcher.
- The cow was accidentally injured and perished, e.g. by falling from a terrace or suffering a snake bite. This happened on a single occasion in the household sample, but was reported to be a frequent issue during village group discussions.

**Box 4.16: “Bad luck” - cow perished from sickness despite good care**

An example from the village of Batlian represents a case where the project did not produce its goals due to reasons that were out of control for the beneficiary household. The household consisted of five members and could command a monthly per capita income of 1,875 PKR, which is above the average. However, the donated cow was weak initially but nurtured very well and recovered, which is also underlined by the fact that it gave birth to two new calves and then produced six litres of milk every day. The household devoted regular expenditures for livestock-maintenance and also reported to have provided basic animal health care. Nevertheless, the cow caught an illness last winter and died eventually.

Source: Interview with household in Batlian village, UC Nura Seri

## **Household scenario 2 - Livestock donation filling a gap**

The second scenario comprises of successful households in which the restocking with livestock filled the gap created by the earthquake. Phrased in other words, these are the households in which the cow helped to reach a level of economic security that is comparable to the pre-earthquake status (Box 4.17). This scenario represents the majority of 66 households in the study sample. Out of these, 57 households still possessed the original cow, six exchanged the cow for a higher valued milking animal, i.e. a cow from local breed (in four cases), a buffalo (in one case), and a buffalo calf (in one case). Three households were able to use the donated cow as a cash box and sold it when other investments were prioritized (e.g. house construction, cf. Box 4.18).

It can be stated that in these 66 cases the restocking project achieved its objectives. The cows represented a valued asset and contributed to household food security through regular, though varying milk production. The cow donation helped households to improve their status by exchanging the cow for a more productive or more adapted animal. In times of need and crisis it served as a disposable asset that could be easily transformed into cash money. Two households represented in this scenario even engaged in marketing the milk, although this was done without producing surplus. Instead, the households skipped own consumption and sold all produce for cash.

Those four households in the sample that exchanged the donated cow into an animal of a local breed do reflect a common trend in the project area. Having a local cow is feasible for many households, as the breed is not as demanding as the donated lowland cow and affords less supervision. Lower investments in caring for the animal are needed, and even though the local breeds have lower milk output it suffices to cover household consumption needs.

**Box 4.17: Donated cow helps to stabilise after the crisis**

A household consisting of 13 members in the village of Choon used the GRC/ICRC donation to stabilise their situation after the earthquake. The household was confronted with casualties, the loss of all livestock (two buffaloes, one cow, one calf and three ploughing oxen) and a destroyed house. Even after three years, their new concrete house is still under construction. The provision of a cow and calf helped this household to cope. After having received the donation, they immediately sold the calf: "*We needed the money urgently and the calf didn't give us milk anyway*". However, the donated cow was kept and valued and is still with the household. "*We are very proud of the cow and care a lot for it. [...] After the earthquake, we lost everything. Now our nutrition and health status has improved. Still, it is not the same like before, [...] but we survive with what we have*". The milk produced is two litres and just covered the household needs. The household further owned grazing land plus four *kanal* of agricultural land, from which they took the wheat of the winter harvest as fodder for the animal. This source is supplemented with high nutritional fodder purchased for 1,000 PKR a month from the bazaar. They used the DoAH-services for animal health, but did not practice preventive health care because it is considered too expensive. The household did not trust the AI-service as it was perceived too costly and not promising results.

Source: Interview with household in Choon village, UC Nura Seri

**Box 4.18: Supporting coping capacities - the cow used as a 'cash box'**

A household with five members from the village of Rajkot used the donation to access cash resources and to support their living situation. One cow and two buffaloes perished in the earthquake, and the house was completely destroyed. Its reconstruction was the biggest priority for the household. However, lack of cash forced them to pay the mason in kind and they gave the cow and the calf as payment for reconstruction. "*For us, housing is more important than having a cow, but without the donation we could not have afforded a reconstruction*". This example represents a case where the donation was used to increase the coping capacity of a household as it widened the choices available and enabled them to cope with lack of shelter. The needs of this low income household need to be regularly supplemented by informal credits from shopkeepers, but they also own nine *kanal* of irrigated land, on which maize and vegetables are cultivated that cover the household food needs for three months in a year. The household also owns a few walnut trees, the produce of which is sold for a small additional income.

Source: Household in Rajkot village, UC Talgran

Thus, in all these cases stabilisation of household economic security was supported through the cow, although no sustainable rural uplift was triggered. This is because the majority of households had some difficulties managing the cow in terms of purchasing the required

high nutrition fodder, and most did not engage in providing animal health care measures. The required regular investments into the maintenance of the donated cow often put pressure on these households and are regularly forgone. The same holds true for the two households incorporated in the second scenario that exchanged the cow into a buffalo in order to increase their milk production. In these cases, the new animal was fed only on grass and the milk production from the buffalo did not cover the household needs. Still, the donation is much valued, as one beneficiary expressed it: *"1.5 litres of milk every day is not much, but it's still something and it helps us a lot."*

### Household scenario 3 - Livestock donation triggering rural uplift

The third scenario represents those 14 cases in which beneficiary households were able to successfully build on the cow donation and to improve their overall situation. An important feature of this type is the ability to produce surplus milk for the market, achieved by above average milk output of the Punjabi cows or exchanging the cow for a higher yielding buffalo (in five cases). This allows for economic development beyond covering basic needs, and creates an additional cash income source (4,000 PKR monthly on average, Box 4.19).

#### Box 4.19: Milk marketing and rural uplift

A six-headed household in the village of Botha had set up a well functioning system of marketing its own milk. The donated cow produced six litres every day, out of which five litres were sold to Muzaffarabad. One litre for self-consumption sufficed in this household with a single child. Selling milk generated an additional cash income of about 6,000 PKR per month, which was more than enough to cover the expenses needed for cow maintenance and the high nutrition fodder required in significant quantities, as the donated cow refused to eat green grass from the household's own field.

This income is supplemented by off-farm labour activities of the grown-up son. The cow is being treated regularly by the veterinary service of the DoAH in Muzaffarabad, which also provided for preventive health care measures. The new born calf was born through artificial insemination by a Government AIT. This household was completely satisfied, but also aware of the responsibility attached to keeping a cow. *"The cow breed is very good. But more important than the breed is how much you care for the cow. What you get out depends on what you put in. We do care for it a lot"*.

Source: Interview with household in Botha village, UC Nura Seri

These households all belong to a group with sufficient surplus cash available and are thus able to regularly invest in the maintenance of the cow or buffalo, and to gradually build up the number of their livestock and their activities in animal husbandry. Another feature is that most of these 14 households do not depend on loans as a livelihood ingredient and are able to allocate sufficient labour force to care for their livestock. Further, all these households actively engage in preventive animal health care and have the means to constantly feed high-nutritional fodder. Most likely this additional care is responsible for high milk outputs. The surplus is used for marketing, which is six litres on average in this group as compared to 3.5 litres for the entire sample.

This group also comprises of two households that belonged to distribution-List B and thus never kept livestock before the donation. Both these households managed to acquire a high yielding buffalo by virtue of the cow donation. Today, one of these households engages in the marketing of milk and dairy products, and the other managed to ensure its food security (Box 4.20).

**Box 4.20: Exchange and uplift - how a household enhanced its economic security**

A six-headed household from the village of Kahori was able to successfully build on the cow donation and to sustainably improve their situation. The household originates from List B and kept its donated cow for ten months until it stopped lactating. This led the household to sell the donated cow and invest in a high yielding water buffalo whose milk is preferred to cow milk. It was also planned to inseminate the buffalo and to gradually build up the number of livestock. The household was not yet selling milk, but also produced dairy products for own consumption. The household does not own agricultural land, but the example shows that even without land, livestock can be kept successfully. This, however, is made possible through the contribution of income generated off-farm - the head of household irregularly works as a jeep driver, which in the project area with its narrow mountain roads is relatively well paid.

Source: Interview with household in Kahori village, UC Kahori



# Chapter 5 - Assessment of structural interventions

The establishment of new professions embodied in the community based Livestock First Aid Workers (LFAWs) and Artificial Insemination Technicians (AITs) functioned as a structural intervention by the GRC/ICRC package. It was conceived as a measure for job creation and/or human capacity building at the village level. The success of this intervention has been assessed by looking at the current position and performance of LFAWs and AITs, the income they are able to realize through their new work, and their acceptance among village communities and government actors.

## 5.1 The performance of Livestock First Aid Workers and Artificial Insemination Technicians

Important part of the livestock restocking programme was the establishment of so-called 'barefoot-veterinarians' or livestock first aid workers. In sum, 37 of these animal health workers were trained and equipped by the GRC/ICRC and assigned the basic function of providing preventive animal health care to the donated cows and other livestock in their areas of work. Out of these, seven AI-technicians were trained and equipped, with an additional three AITs that were drawn from the Government Department of Animal Husbandry as a measure of mutual support and cooperation. LFAWs and AITs were supposed to work in close partnership with governmental institutions, both in order to avoid unnecessary competition and to benefit from each others expertise. AITs were also supposed to be equipped by the DoAH with cooling devices to store the semen in liquid nitrogen. The rationale behind this intervention was to provide remote mountain households with basic animal health care and the means for livestock reproduction by establishing these new professions right at the village level. This was intended to enhance the sustainability of the restocking project as a whole, but also to provide a few individual households with the opportunity to establish a new basis for their livelihoods. Each of the selected 37 people was assigned a certain space for work that usually comprised of a number of adjacent villages. This allowed the workers to minimise mobility efforts and enabled households to access the new services without great effort.

In order to assess the performance and range of activities carried out by these new specialists in the project area, a focus group discussion was arranged at the ICRC premises in Muzaffarabad to which all 19 LFAWs assigned to the study area of four Union Councils were invited. Nine of those accepted the invitation, and an additional five absent LFAWs were subsequently interviewed via telephone. Five of the interviewed persons also work as AITs.

**Table 5.1: Number of LFAWs/AITs working in four Union Councils**

Union Councils	LFAWs working	AITs working	LFAWs not working
Saidpur	4	3	0
Talgran	4	1	1
Nura Seri	1	0	1
Kahori	2	1	1

Source: Focus Group Discussion and Telephone Interviews 2009, N=14

Out of the 14 LFAWs/AITs interviewed, eleven are presently still working in their assigned areas and all Union Councils studied are potentially covered by their services. Table 5.1 shows the actual number of LFAWs and AITs interviewed who are still working in the assigned Union Councils. However, one LFAW works in two Union Councils, UC Saidpur and UC Kahori, and another two apparently work in several Union Councils not originally assigned to them in addition to their assigned areas. Three LFAWs/AITs discontinued their work for the following reasons:

- Too little and irregular demand for the service and thus no reliable source of income
- Widespread poverty conditions resulted in customers not paying an adequate amount for the service
- Competition with governmental health services for livestock and government dispensaries
- Economic crisis (increasing food prices)
- Lack of personal motivation

In terms of coverage provided by LFAWs and AITs, merely nine of the 18 study villages regularly access the services provided. Eight villages solely rely on DoAH services and veterinary dispensaries. Two villages, namely Karka of UC Nura Seri and Batangan of UC Kahori, reported having no access to any animal health care services, thus using only herbal medicine for treatment. This means that only half of the studied villages regularly use the LFAW/AIT service provided by the GRC/ICRC.

However, the community veterinarians do not check the livestock on a regular basis and apply preventive measures. Rather, they are called when health problems arise, to carry out pregnancy tests or to artificially inseminate cattle. Still, the overall performance of LFAWs/AITs is perceived quite positively by villagers, though appreciation varies when individual households judge the services. The success and acceptance of the community veterinarians and the demand for their services mainly depend on individual qualities and how motivated a LFAW/AIT performs his duties. Thus, careful targeting of LFAW/AITs has been essential for the success of the intervention.



## 5.2 Self assessment of LFAWs and AITs

*„Before we were useless people, but now we have a job“*

(Statement from LFAW at Focus Group Discussion held on March 23, 2009)

How do LFAWs and AITs perceive their work, and the problems and prospects related to their new profession? In order to address this central question, the animal health care workers were asked to analyse the strengths, weaknesses, opportunities and threats affiliated with their new profession (SWOT analysis in table 5.2).

Table 5.2: SWOT Analysis of LFAWs and AITs

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>• Villagers have easy access to animal health care facilities</li> <li>• Trainees are providing a local service at a cheap cost</li> <li>• The GRC/ICRC veterinary training provides a new profession and an additional source of income</li> <li>• LFAWs/AITs are more respected in their villages</li> <li>• Work as a veterinarian provides practice and experience for subsequent jobs</li> </ul>	<ul style="list-style-type: none"> <li>• Due to family or personal relationships with the veterinarians, most villagers expect treatment either at low cost or for free</li> <li>• Competition with the DoAH service</li> </ul>
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>• Other organizations, institutions or projects could provide similar job opportunities in the future</li> </ul>	<ul style="list-style-type: none"> <li>• Due to rising food costs villagers are less willing to seek veterinary services; therefore the demand of LFAWs/AITs is reduced.</li> <li>• The expenses of veterinary services are increasing.</li> <li>• If the financial crisis continues there is a continuing threat for the future: some of the LFAW are already thinking of switching to other jobs</li> </ul>

Source: Focus Group discussion with LFAWs and AITs; March 23, 2009

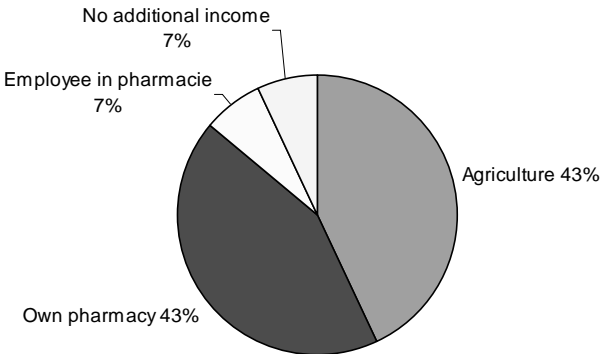
As a general impression, the LFAWs and AITs reported being satisfied with their work, as it gradually provided them a new and appreciated status in their communities. This, however, was not the case in the beginning. There were problems of acceptance among the population because their services were new to the villagers. People were accustomed to the DoAH veterinarians who had a technical education in animal health and were mostly senior staff. People had more confidence in these government staff skills. With time, the villagers understood the LFAWs/AITs role better and made more use of their services as 'barefoot veterinarians' who provide a local service at a low cost and can go directly to a person's home when called. Over the following, the specific issues stressed in the SWOT-analysis are discussed.

### 5.2.1 Economics of 'barefoot veterinarianism'

Conceived of as a means to improve the income situation of LFAW/AIT households, the actual economic situation appeared to be stricken with several problems.

In comparing their workload and expenditures needed to carry out their work, their income is unbalanced. For instance, when being requested for a single treatment in a more remotely located village in their coverage area, a full day is consumed. In addition, there are expenditures for travelling and investments in medical equipment purchased from Muzaffarabad. In return, a treatment is being remunerated with 250 PKR, which does not provide much scope for profit-making. Most LFAWs reported that a single treatment per day is very common, in case they are called-for at all. Apparently, their services are not much in demand.

This lack of demand also stems from the lack of ability of poor livestock owners to afford preventive animal health care and who therefore often omit necessary treatments. Consequently, it is rather unfeasible to make a living solely as a barefoot veterinarian. Thus, all but one LFAW also have other paid jobs and/or income sources generated from agriculture (Figure 5.1).



Source: Household survey by ZELF evaluation team 2009, N=14

Figure 5.1: Additional income sources of interviewed LFAWs/AITs

A related problem is that very often LFAW services are not paid for at all (Box 5.1). This is because in the home villages personal relationships with neighbours and relatives raise expectations that the LFAW will provide the services without any payment. This social obligation turns out to be an obstacle, as the expenditures for their equipment still have to be paid. As one respondent in the focus group stated: *„I have almost 6,000 PKR in the book but nothing in the pocket.“* A strategy to deal with this specific issue has been devised by two LFAWs, who swapped their areas of work. Having no personal relations in their new area, service for free could not be expected anymore by customers.

**Box 5.1: “I gave up my work as LFAW”**

M. S. was a LFAW assigned to a few villages in the UC Nura Seri. His home village was also surveyed by the evaluation team, but many people in that particular village did not even know that such institution existed. This is also due to the fact that M. S. stopped working as an animal health worker very shortly after his training.

Before starting to work as LFAW, M. S. owned a fodder shop and hired out a grinding machine for stones used in house construction. He gave up his shop because he hoped to make more as veterinarian. However, this turned out to be a futile hope, and it soon became clear that there was not much economic benefit to be gained as an LFAW. M. S. said there was a misunderstanding regarding his income, because people thought he received a fixed salary from the ICRC so nobody cared about paying him:

*“After I had closed my shop there was no other income to cover expenses for medicine and travelling to the villages assigned to me, so I had to stop working as a LFAW a few months after having received the training from GRC/ICRC. Now I even cannot generate income from the grinding machine anymore, because most reconstructions of houses have been completed by now. At the moment I work as a mason mostly in Muzaffarabad.”*

Incidentally, the home village of M. S. represents a particularly bad case in terms of project success, because only nine out of 39 distributed cows there survived until today. A reason for this performance might be that many beneficiaries there did not provide preventive health care at all, in spite of the distribution taking place late in the year, in October 2006. It can be assumed that this is somehow related to the non-existence of basic animal health care services.

Source: Telephone Interview on April 1, 2009

Some LFAWs were however able to extract benefits from their training and their work. Their training and new capabilities enabled them to widen their choices and opened up new opportunities. Respondents said that they now have the possibility to enter new arenas of work, such as in NGOs or in Government service (Box 5.2). In fact, one LFAW already took his chance and works now for DoAH in Muzaffarabad.

Another prospect is the establishment of small village based veterinarian pharmacies. Six of the interviewed LFAWs did establish a pharmacy of their own already, and another is a regular employee in a pharmacy. Even those LFAWs who do not run a veterinarian pharmacy are able to occasionally sell medicine for a small profit from the stock they keep at home.

There are also a few successful examples, where dedicated barefoot veterinarians were able to establish a positive reputation and managed to generate good incomes out of their profession. Among the interviewees there were two such positive examples where LFAWs were busy providing services every day. One respondent mentioned that he treated 39 animals in February 2009, and the other treated 33 animals over the same period. These treatments included vaccinations, pregnancy tests, as well as artificial inseminations. These examples show that being successful as LFAW or AIT is also a matter of dedication to the profession.

#### Box 5.2: New job opportunities for LFAWs/AITs

M. A., an LFAW from the UC Talgran, took a temporary assignment as a community animal health worker with an NGO after having received the GRC/ICRC training. There, he received additional training units and worked for the NGO in the Neelum Valley. As such, he further enhanced his skills in addition to receiving a relatively high fixed salary of 10,000 PKR per month. After finishing this work, he returned to Talgran and continued his duties as LFAW in his assigned area.

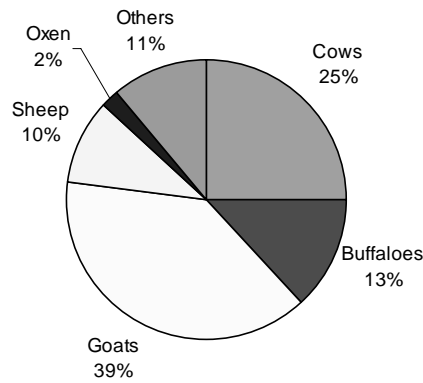
Source: Interview on March 23, 2009

### 5.2.2 The work routine of barefoot veterinarians

*„We treat everything, from chicken to elephant!“ (Statement in Focus Group on March 23, 2009)*

LFAWs treat all species of livestock present in villages, although most often their services are provided for cows and buffaloes (Figure 5.2). Occasionally even treatments of dogs, mules and chicken were reported. Individual workloads, however, significantly vary. The above cited examples of successful LFAWs who treat a larger number of animals every month pose an exception. Most others do complain about a lack of demand. The irregular work and the required substantial investments seem not to pay-off. The two successful animal health workers together treated 72 animals in February 2009, whereas the remaining twelve only accounted for twelve animals cared for.

Most diseases that were treated in the reported 84 cases were pneumonia, diarrhoea, scabies, skin problems, ticks and mastitis. De-worming and vaccination were mainly applied to the distributed GRC/ICRC cows and local breed cows, and the beneficiaries have been trained to perform these regular duties themselves. Still, the demand for this service to be applied by a LFAW appears to be increasing.



Source: Household survey by ZELF evaluation team 2009, N= 84

Figure 5.2: Animals treated by GRC/ICRC veterinarians during the month of February 2009

However, all LFAWs stressed the point that the distribution time of the donated cows mattered and many diseases could have been prevented. Cows which were distributed not long before winter had a much lower survival rate during the first year in the mountains as they were not able to adapt so quickly to the harsher climatic conditions and were often put into inappropriate shelters, such as tents. Such cows were prone to catching pneumonia and were weakened by the fact that most villagers were not in the position to provide sufficient quantities of appropriate fodder.

### 5.2.3 Effect of economic crisis on demand for veterinarian services

The work of the LFAWs and AITs is strongly influenced by the current financial world and food crisis that also severely hit Pakistan and its economy. As a result, many people have been forced to reduce their household's expenses to the minimum. Accordingly, spending money on medicine for livestock is perceived as of lesser importance. People first try to cure their animals with herbs and home-made remedies that cost nothing before calling a veterinarian. Often it is too late when severe illnesses have matured too long. Since households have less money at their disposal, the LFAWs and AITs cannot afford to adjust the fees for their service. The ongoing financial crisis presents a serious future threat to the work of the LFAWs/AITs and many are already thinking of giving up their work entirely and switching to other jobs.

## 5.3 Cooperation and competition between LFAWs/AITs and government agencies

Competition amongst LFAW/AIT appears not to be an issue, and the demarcations of respective areas of work is clear to everybody, as was also stated in the group discussion: „*We respect the areas designated to each of us by the ICRC!*“

There exists also a spirit of cooperation that helps LFAWs to perform their job more effectively, and nobody encroached on other people's domains. However, in spite of a mutual agreement between the GRC/ICRC and the DoAH, with the latter even officially praising the work done by barefoot veterinarians, the competition between the two bodies of animal health care providers is perceived as problematic. Sometimes the duplicated offer of services has led to a loss of clients for LFAWs, especially because the government service is cheaper in many areas. Duality is especially a problem in the Town Council of Pattika, where people from adjacent villages have easy access to a government-operated animal health dispensary. As a consequence, the LFAW from the area terminated his business of selling veterinary medicine kept in stock at home. In addition, the work of LFAW/AIT is licensed by the government authorities, but the DoAH is not pro-active in issuing these documents, which often poses problems for the private animal health workers. However, the existence of government services in a specific work area does not necessarily turn into competition (Box 5.3), and in one Union Council government employees and LFAWs reportedly cooperate (Box 5.4).

### Box 5.3: “My first priority is always to make animals healthy!”

A LFAW from the village of B. has to face the competition of two government facilities in one of his designated villages. Those facilities provide medical supplies and veterinary service. However, this does not present any competition for him because although the technical government staffs are well educated they do not know much about the practice of animal health care. Because of his expertise the LFAW service is appreciated and perceived as of a better quality than the government facilities. Again, this example shows that personal dedication, a good reputation and a certain level of expertise are necessary preconditions in order to carry out the work of a barefoot veterinarian effectively and with economic success.

Source: Interview on March 23, 2009

The interviewed AITs however reported that there exists competition not only with the government but also among themselves. This is so because their services are not in high demand due to the fact that in a majority of cases artificial insemination does not yield positive results. Disillusioned farmers who have not been successful in reproducing their livestock, however, in almost all cases dispose of their cow after a while, because without a calf its lactation period will end and it becomes a burden rather than an asset.

#### Box 5.4: Let's cooperate! AIT and Government work in partnership

In the village of S., the local AIT and Government work in partnership for mutual benefit. Both use the same container of semen, and they have established a system where they jointly provide services when demanded and share the income.

When a service is demanded from the AIT home village, the AIT's share of income is higher, and vice versa when the government employee's home village is serviced. This agreement was arrived at with the mutual understanding that this system would avoid competition between the two and would be mutually beneficial at the same time.

Source: Telephone Interview on April 1, 2009

However, in a few instances the field teams came across cases when a cow was sacrificed for religious festivals and or celebrating rites of passage. In a few instances, tragically only then it was discovered that the cows had been actually pregnant. Thus, there is evidence that AITs are often not able to detect and to determine whether an insemination was successful or not. In any case, their service is not regarded as cheap, and consequently most villagers prefer local breeding bulls. The preference is reflected in the fact that three years after the earthquake those breeding bulls are available in higher numbers.

Other problems reported by AITs specifically is keeping the semen intact, especially over frequent lean times resulting from a lack of demand for their services. This requires the AIT to travel to Muzaffarabad to preserve the semen in a government facility.<sup>12</sup>

## 5.4 The future of Livestock First Aid Workers

What can be learned from the experience of LFAWs and AITs after three years of practice? Certainly, the GRC/ICRC intervention in the animal health sector of Pakistan-administered Kashmir was adequate to accompany the distribution of cows and important in view of the sustainability of project outcomes. However, internal and external constraints posed challenges to the performance of 'barefoot veterinarians'. These factors include the following:

- Competition with government veterinary services. Although this constraint was addressed during implementation through a prior understanding with relevant Government institutions, practice shows that many LFAWs and AITs, in particular, faced problems which were led them to leave their new profession.
- Villagers did and do not trust the expertise of LFAWs/AITs. This has been reported repeatedly, both from villagers and the trained animal health workers. Partly, this is a problem of individual capacities, as there is a spectrum of performances and capabilities among the group of LFAWs and AITs. Those who are dedicated and were

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<sup>12</sup> Apparently, there are other problems, e.g. a lack of supply of the needed containers for semen preservation, whose provision is the responsibility of the government institutions.

able to gain a positive reputation fared relatively well in their new profession and have sufficient work to establish an income. This, however, remains very exceptional, and most people interviewed reported that villagers do not consult them as much as they wished.

- The work of a LFAW/AIT does not generate sufficient income. It seems to be the major reason why many left their positions and why others sought to build on the training received and went into other professions, e.g. Government or NGO positions. The problem of not being paid by relatives and neighbours is a widespread phenomenon and hampers the sustainability of veterinary service providers.

Giving these constraints that have even been further fuelled by the ongoing financial crisis, the structural intervention succeeded only partly for a selected group of the trained animal health workers. Most were unable to build a fixed clientele for their services, and demand appeared to be lacking in general. Most villagers are not aware of the value of preventive health care and many lack the means to afford appropriate investments in veterinary services.

One supportive response could be the creation of an awareness campaign that propagates the value of animal health care and that advertises the services available through LFAWs and AITs. Further, these services provided by barefoot veterinarians need to be further streamlined with government activities to avoid unnecessary competition. After all, keeping services available locally through trained personnel and re-establishing a demand is important to keep LFAWs in their profession. Otherwise, investments into the provision of services for animal health care that should benefit the entire area will increasingly turn into investments in personal capacity building for selected individuals.



## 6 Conclusions

Three years after the implementation of the GRC/ICRC livestock project a number of lessons have been learned. These lessons refer in part to institutional learning processes, as the donation of livestock and the engagement in a project situated at the interface between relief and development was a new experience for both the GRC and the ICRC. The evaluation on which this report is based, which was carried out by a team of Master students in development geography, can be seen as part of this institutional learning.

The lessons learned, however, also refer to the practicalities and logistics required to carry out a complex project such as the donation of a substantial number of lactating cows with their calves to mountain households. In this respect, the evaluation found that the project was carried out in an exemplary fashion, where all project steps were carefully considered and accompanied by veterinary expert monitoring that ensured that all donated cows were healthy and did not carry any diseases. The same can be said for the selection of beneficiaries which was carried out as transparently as possible, with major responsibilities delegated to the target communities themselves. Both factors are a significant achievement of the livestock programme in itself.

The most important lesson learned, however, is that the livestock donation was generally successful and addressed a critical gap by supporting the rehabilitation of the livestock population in the earthquake affected area. The donations improved beneficiary household's food security as well as increasing the economic security of those households through the provision of a valuable asset. As such, the donation of the animals fit well as a supplement to the general aid packages received by affected households and managed to partly fill the important niche of re-establishing the marketing of locally produced milk to some degree. Also, the accompanying project measure of training community animal health care workers showed some effect, as reproduction rates of the donated cows were satisfactory, in spite of the fact that a majority of donated calves perished very early after distribution.

That the intervention was overall successful can already be seen from the data unearthed by the evaluation team - the majority of donated cows are still present in the original beneficiary households or have been replaced by a higher valued milking animal. Therefore, three years after implementation the major project goal of supporting households by enhancing their food security and their economic security through the donation of a cow and a calf has been achieved for a majority of beneficiaries. The differing degrees to which this has happened have been summarised by the evaluation team using three household scenarios representing the different levels of project success:

1. Livestock donation with limited success
2. Livestock donation filling a gap
3. Livestock donation triggering rural uplift

A smaller number of beneficiary households experienced economic uplift by virtue of the donation, as exemplified in the third scenario. The vast majority consolidated their situation, whereby the donated cow filled a gap and was used to bolster household security and helped to widen their available choices. The more problematic issues of the project were exemplified by the beneficiary households that are represented in the first scenario, where project outcomes were either very short-lived, as they merely translated into a one-time cash transfer when the cow was sold immediately, or non-existent because the cow perished very quickly after distribution. The following problems are to be addressed if the GRC and the ICRC attempt to replicate the project in other disaster areas:

- Distribution time needs to be considered more carefully. Cows not adapted to the harsher mountain climates need to be distributed earlier in the year, and not immediately before the onset of the cold season as happened in many cases. Households that received their cow late in the year faced more trouble bringing it through its first winter and were more likely to be overburdened by the additional workload and investments needed for maintenance.
- Targeting needs to focus more on households that can prove they are capable of ensuring high maintenance standards and providing adequate shelter for the animal. It was observed that in many cases no winter-shelter for the donated cow had been established by beneficiary households, in spite of this having been a precondition for selection. Many preventable diseases and unnecessary deaths of donated cows occurred because households were not able to establish proper shelter for the animal.
- Veterinary services and application of preventive animal health care are to be ensured through expert project staff in the first winter. In spite of beneficiary training, a majority of households did not regularly, if at all, apply preventive health care measures. This was for various reasons, with some people lacking the knowledge and others not having the financial means to afford investments in medicine. Expert monitoring of animal health after distribution would have raised awareness about the importance of preventive health care and could have saved many cows in the project's early stages. Thus, the application of preventive health care is initially to be provided by the project for each beneficiary household.
- Beneficiary training for women has to be enforced. As women are responsible for maintaining the livestock in PaK's household systems of labour sharing, basic animal health training has to be provided to them. Cultural issues led the GRC/ICRC pro-

ject to focus the training mostly on men, but this did not prove to be very productive, with animal health care neglected in most households. Along with enforced preventive health care by the project, training of women should take place to make sure that the capacity is built of the responsible person in a beneficiary household.

- Livestock First Aid Workers need more initial support to establish positive reputations. A majority of the trained animal health workers were not able to establish a proper basis for their new profession and were not really accepted by their communities. It became clear, however, that those few who were able to establish a positive reputation have sufficient work to maintain their livelihoods through the provision of animal health care and the sale of veterinarian medicines. The circumstantial evidence indicates that the project needs to provide more initial support to these professionals in order to help them gain experience and win the trust of communities.
- Government cooperation needs more facilitation. The Department of Animal Husbandry as the expert government service for animal health and livestock monitoring assumes a central role for project success. However, cooperation of the Department with community animal health workers is mediocre at best, and in many cases posed a source of competition that led many trained community workers to give up their new profession. In future projects, different ways have to be discovered to ensure sustainable Government cooperation with community based Livestock First Aid Workers.

The success of the livestock programme has been significant. Compared to similar packages provided by donor agencies the GRC/ICRC livestock programme attributed to the welfare of the affected people in a manner that immediately improved living conditions and provided mid- and long-term assets to the households. It should not be underestimated that careful consideration, the understanding of local conditions and transparency in selection of beneficiaries and distribution of assets are the success factors for such an ambitious endeavour. The participatory approach was adapted to local frame conditions and augmented by professional expertise along the functional chain from linking cow-breeding areas and markets with the earthquake-affected people. Under post-earthquake conditions in PaK the enterprise fared well.

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# 8 Annexes

## Annex 1 - Guideline for focus group discussions

### 1. Basic facts & village history and location

- Name of village, Union Council
- Names of participants
- Approximate number of households and inhabitants
- Denominational and ethno-linguistic aspects
- Village history
  - Timeline from one year before earthquake
  - What was before?
  - Damages to houses / assets; casualties
- Agricultural location
- Elevation
- Infrastructure: Road access, distance (in hours) to district center, water access
- Main crops, cropping patterns, cropping seasons (ekfasli, dofasli?)
- Number of livestock, which animals; importance of livestock to local economy
- Relative importance of off-farm activities, of non-agricultural activities.
- Which activities? Migration?

### 2. Market relations

- What goods are available in the village and what is purchased and sold outside the village?
  - Where is the bazaar you frequently visit?
  - How many shops are in the village? What do they sell? -> food, clothing, equipment, fertilizer, fodder, ...
  - What are relations to livestock-markets?
    - Do you sell to contractors (thekedars)?
- Are there any livestock-related services? (e.g. health services, ploughing oxen, breeding bulls, insemination, fodder shops)
- How can households access microfinance schemes? (Credit system)

### 3. Social infrastructure

- Do you have schools in your village? Primary, secondary?
- How many persons go to boarding school outside the village?
- How are health services organised?
  - Dispensaries
  - Private clinic
  - Government hospital
- What kind of social welfare institutions exist in your village?
  - What topics are they concerned with? What are their responsibilities?
  - What is the most important institution on the village level?
  - Who are the members?
  - What new institutions have been founded since the earthquake?
  - Where are social meeting points?

- Who are the most respected persons?
- Who selected the members of the ICRC-committee (as an indicator for who are the important decision makers)?
  - Which questions are decided by committees?

#### 4. Earthquake and relief / reconstruction measures

- What relief packages were offered, what was their relative importance?
- Which organizations are present until today?
- What is the Importance of the ICRC livestock project relating to other projects?
  - Donation of cows?
  - Work of LFAWs / AI-technicians?
  - Fairness of distribution?
  - Work of the committee?
- What was the effect of this project on the economy of the village?
- What was the effect on social life?

## Annex 2 - Guideline for household interviews

Selection: 15 villages in 5 union councils

5 households per village (3 from beneficiary List A, 1 from List B, 1 from female-headed beneficiary household)

Baseline → see questionnaire table

### Earthquake impact and relief

- Impact of earthquake
  - severeness of damages and losses
  - impact on food and health security, living condition, diseases
- Relief/Aid received (everything besides cow restocking → ranking of different relief programmes)

### Animal Husbandry

- Meaning/importance of cows
  - Status enhancement of beneficiaries
  - Economic → higher income through cows
  - Well-being (health- and nutrition-related)
- Utilisation of cows (needs/problems of new breeds vs. old)
- Marketing of products → what products (dairy, milk, meat, leather,...)
  - Bartering of products
  - Sharing of products
- Division of labour in animal husbandry
- Livestock management (sale and purchase of livestock and products, vet services,...)
- Fodder supply (grown/purchased) → for cows (different breeds) and other livestock
  - Winter fodder supply
- Access to grazing land
  - Utilisation (seasonality,...)
  - Distance
  - User rights
- Animal health (services, reproduction)
  - Perceptions of LFAW vs. DoAH service → why positive, why negative

- Perceptions of AI → why positive, why negative
- Additional costs
  - Extra expenditure for fodder
  - Vet costs
  - Shelter
  - Workload
- Cow dung usage (animal manure, cooking material)

#### Agriculture and forestry

- Land ownership
  - Share cropping (input, output)
- Cropping patterns (which crops, how many, how often..)
- Land use systems: Abi (irrigated), Barani (rain-fed)
  - Source of water
  - Water rights (access, costs)
- Division of labour in farm management (male, female, children, external helpers)
- Extra household farming inputs
  - Chemical fertilizer
  - Pesticides
  - Improved seeds
  - Threshing and ploughing equipment
- Interlinkages with animal husbandry (forage grazing, fodder sources, ploughing oxen, animal manure)
- Access to forest resources
  - Timber, firewood, herbs and plants
  - Utilisation rights

#### Off-farm income

- Civil and military services
- Wage labour
- Remittances from migration
- Tourism
- Trade, small enterprises
- Share of household income → questionnaire

#### Credit/Finance

- Expenditures (monthly, occasionally, exceptionally)
- Access to credit → for which purpose credit is needed
- Credit sources
  - Informal (shop keeper, relatives, friends)
  - Formal (microfinance bank, commercial bank)
- What collateral (cow, house, etc.)

#### Social networks

- Modes of self-help
- Village organizations, women organizations, other social institutions

## Annex 3 - Guideline for expert interviews with different actors

#### LFAWs / AITs:

- Spatial outreach / range



- Job
  - Satisfaction
  - Economic benefit / performance
  - Job description
  - Other sources of income
  - How much livestock treated?
  - Equipment needed (what is purchased and where)
- Acceptance (self-assessment)
  - By communities (seen as experts?)
  - By government
  - Competition (with whom?)
- Other opportunities resulting from occupation (e.g. vet pharmacy)
- Own assessment of livestock situation (local breeds vs. new breeds) and reproduction rate
- SWOT Analysis

DoAH:

- Mandate and scope of activities
- Assessment of LFAWs / AITs
- Service infrastructure
- Cooperation with LFAWs / AITs / Committees
- Utilisation of project results in other areas
- SWOT Analysis

Union Council members:

- Their perception of project (SWOT)
- Other livestock-related development packages in the area (government and NGO)

Livestock Committee members:

- Assessment of committee's work:
  - Similar organisations before the earthquake?
  - Regular meetings? When, how often, are all members present?
  - What people were elected in the committees, what was their status before, what is it now?
  - What topics is/was committee working on?
  - What is/was the committee's influence?
  - Social status of the committee members?
  - Has the committee proven useful in dealing with livestock-questions?
    - making decisions concerning other matters
    - settling conflicts
    - what else a committee could do
  - What problems did arise in the work of the committee?
  - Do other institutions cover similar issues? Which institutions are there?
  - Linkages to government institutions
- Assessment of the ICRC-project

How has working in the committee influenced your social status?

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