

Strengthening the humanity and dignity of people in crisis through knowledge and practice

## Impact Assessment of the Pastoralist Survival and Recovery Project Dakoro, Niger

John C Burns • Omeno W Suji • Alexa Reynolds  
April 2008



Impact Assessment of Innovative Humanitarian projects in Sub-Saharan Africa, in partnership with  
the Bill and Melinda Gates Foundation and Lutheran World Relief



## Acknowledgements

The research team would like to thank Abdelah Ben Mobrouk of Lutheran World Relief (LWR) for his support and valuable contribution to the overall exercise. Our gratitude also goes to the Contribution Dedication de Base (CEB) team; Omar Abdou, Hawada Hargala, Halima tu Kunu Moussa, Ousmane Chai and Mahamout Maliki, many thanks for their participation and for their hospitality in Dakoro. Thanks also to the LWR Country Representative Mme Ramatou Adamou for her support and hospitality in Niamey, and the LWR Regional Representative Mahamadou Ouhoumoudou for his participation in the mid term assessment and for providing translation and support to the Feinstein team. Many thanks also to Jacque Ahmed for his tireless efforts during the data collection and for clarifying indicators. The team would also like to thank Heather Dolphin and Megan Armistead and their colleagues from LWR Headquarters for their help and support with communications and planning for the field exercise.

From the Feinstein Center many thanks go to Dr Andrew Catley, Dr Dawit Abebe, Dr Peter Walker, Dr Helen Young, Katherine Sadler, Rosa Pendenza, Elizabeth O'Leary and Anita Robbins for providing technical and administrative support. The research team would also like to thank Regine Webster, Mito Alfieri, Kathy Cahill and Dr Valerie Bemo from the Bill and Melinda Gates Foundation for their support.

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### Acronyms and Abbreviations used in the Report

ARVIP	Pastoralist Relief and Recovery Project <sup>1</sup>
CEB	Contribution a l'Education de Base
CFA	Communauté Financière Africaine (Francs)
FGD	Focus Group Discussion
FIC, Tufts	Feinstein International Center, Tufts University
HH	Household
HHI	Household Interview
Kg	Kilograms
MT	Metric tons
M&E	Monitoring and Evaluation
PIA	Participatory Impact Assessment
RFP	Request for Proposals
SWOT	Strengths, Weaknesses, Opportunities & Threats
S-SAFRE	Sub Saharan Africa Famine Relief Effort
VSF	Veterinaires san Frontiers

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<sup>1</sup> *Appui a'la Rehabilitation des Systems de Vie Pastoraux (Support for the Rehabilitation of Pastoralist Systems)*

## Summary

This report documents the findings of an impact assessment of the ‘Pastoralist Survival and Recovery Project’ implemented by Lutheran World Relief and partners in North Dakoro, Niger. The assessment is one component of a broader applied research initiative “Impact Assessment of Innovative Humanitarian Projects in Sub-Saharan Africa” supported by the Bill & Melinda Gates Foundation. The research which is being carried out by the Feinstein International Center (FIC, Tufts) focuses on the development and application of a participatory assessment toolkit to measure the impact of seven projects in Africa being supported by the Foundation under a separate grant; the “Sub-Saharan Africa Famine Relief Effort”. All seven projects have taken an integrated livelihoods approach to alleviating the immediate needs of the affected communities, and to addressing the longer term vulnerability issues resulting in famine and food insecurity.

The ‘Pastoralist Survival and Recovery Project’ was designed to assist ten pastoral communities living in the Tarka Valley recover from the effects of a prolonged drought, culminating in locust attacks and a failed harvest in 2004. The project also aimed to enhance the capacity of pastoral communities to cope with the effects of future droughts and other shocks by ensuring year round access to food and income. The main project activities included the establishment of six livestock feed banks, restocking of small ruminants, and the construction of four wells for both human and livestock utilization. The project also included a number of training and capacity building activities designed to support the hardware components of the project.

The impact study focused on the re-stocking and animal feed bank project interventions, and set out to assess what changes in household food security and income had occurred as a result of the project. The study also looked at how the re-stocking activities might have potentially improved participants resilience to future droughts and other shocks. The assessment was carried out by project staff from Lutheran World Relief (LWR) and Contribution `a l’Education de Base, and supported by a consultant from LWR and a consultant and a research assistant from the Feinstein International Center.

The findings of the assessment indicate that the project has had a positive impact on animal health, which has resulted in an increase in livestock assets. The project has helped the affected communities to recover their livelihoods through re-stocking and improved animal production, and in doing so it has improved people’s access to both food and income.

The results show that there has been an overall improvement in household food security since the project started. This was largely attributable to improved rainfall in the project area resulting in an exceptionally good millet harvest in 2007. Improved livestock production has also contributed to short term household food security, in the form of milk transfers, and food purchased from the sale of livestock and livestock products. The quantitative data from the assessment reflects positive changes in household food and income attributable to the project, although these changes are not statistically significant. The main reason

for this appears to be that most of the food and income benefits from the project have yet to be realized. At the time of the assessment these potential benefits were mostly tied up in livestock, and the results show that some project derived income was being invested in livestock assets. These livestock could, if necessary, be sold and converted into either cash or food. Arguably this has not happened as the overall improvement in food production from crops has diminished the need for people to sell or exchange their livestock for food or cash.

Livestock assets are a key indicator of food security in the project area, and project participants defined food security in terms of livestock ownership. The increase in livestock assets and the improvements in livestock production therefore represent an impact on people's long term food security. The potential income and food benefits that might eventually be derived from these livestock could be considerable. Conservative estimates of the current value of the sheep born from the restocking exercise alone, converted into well over a month's supply of cereal for each participating household. However, seeing as these benefits have not yet materialized, the actual impact in terms of food and cash transfers could not be measured except hypothetically.

Improvements in livestock health attributed to the feed banks have also helped to increase people's resilience to drought and other shocks. Not only will healthier livestock be less susceptible to the impact of drought and livestock disease, they will also to some extent retain their market value through supplementary feeding from the project feed banks. In effect these livestock assets act as a buffer or a kind of insurance against future shocks and drought. In this respect the project has helped to strengthen pastoralist terms of trade thus improving their resiliency to both drought and market shocks. The overall increase in livestock assets was also said to have improved social status both at the individual and community level.

Other project benefits include income in the form of savings which otherwise would have been spent on milk for consumption and re-stocking. Additional savings were made on animal feed purchased through the project feed banks and transport costs. A by product of the capacity building component of the project has been the independent establishment of women's savings and lending groups. These groups have also been credited with improving social cohesion.

The project has been effective in achieving its goal of improving access to food and income, even if people have yet to fully exploit this improved access. Through the re-stocking and feed banks, the project has not only helped with livelihoods recovery, but has also helped to protect pastoralist livelihoods from future droughts and shocks, by improving the communities' resiliency and capacity to cope with these events.



**Assessment participants doing participatory scoring exercises**

## 1. INTRODUCTION

The Sub Saharan Africa Famine Relief Effort (S-SAFRE) “Close to the Brink” was launched towards the end of 2005 in response to a major famine affecting South Sudan, the Sahel and Southern Africa. Under this initiative the Bill and Melinda Gates Foundation put out a Request for Proposals that called for ‘innovative projects that would prevent and reduce both the short term and long term severity and hardship of populations close to the brink of acute famine’<sup>i</sup>. Taking into account reports that an earlier response might have minimized the impact of the famine on the affected communities, the RFP suggested that projects assisting ‘populations facing an impending crisis’ would also be considered, stipulating that the “proposed interventions (would) be considered for their potential to serve as examples in mitigating such crises in similar settings and emergencies in the future and thus their ability to conduct rigorous evidence based impact assessment”<sup>ii</sup>.

The project proposals were further evaluated on the basis of innovation, clarity of the objectives and implementation plan, organizational capacity, experience and ability to collaborate with other partners, a clear exit strategy, budget, and monitoring and evaluation (M&E) plan. The maximum allocation for each project was to be no more than \$ US 1 million, and the project timeframe was to be approximately eighteen months. The RFP also indicated that fifteen percent of the budget be allocated towards M&E, and other data collection activities - an unconventionally high proportion for a humanitarian assistance project budget.

On the basis of this RFP process, project grants were awarded to seven projects (including the Pastoralist Survival and Recovery Project), being implemented by six organizations in South Sudan, Mali, Niger, Malawi and Zimbabwe. In an attempt to address the multiple objectives of being ‘innovative, responding to short term suffering, and mitigating longer term crises’ all the projects elected for an integrated portfolio of interventions. Essentially these interventions were designed to alleviate suffering, and at the same time to support livelihoods, and build up peoples resilience to future shocks such as food insecurity and



drought. All seven projects supported either agricultural or livestock production, others included either micro credit or micro lending, and two included health and therapeutic nutrition components. The overall goal of all seven projects was to improve the food security (or nutritional status) of the communities being assisted. All seven projects started either at the end of 2005 or early 2006.

### 1.1 Impact Assessment of Innovative Humanitarian Projects

Under this research grant, the Feinstein International Center was commissioned to support the implementing partner organizations in developing their participatory evaluation techniques, to develop and field test an impact assessment toolkit, and to lead a final impact assessment of three or four selected projects<sup>2</sup>. The objective of these final assessments is to measure the true impact of the projects being implemented under the Sub-Saharan Africa Famine Relief Effort.

The specific objectives of this research are:

The development of an impact assessment approach and methodology with the organizations implementing the Sub-Saharan Africa Famine relief projects.

1. The application of this methodology to selected agency projects to produce a comprehensive impact evaluation report.

In order to meet these goals and objectives, FIC, Tufts has worked in partnership with, and provided support to the implementing organizations over the course of the project. The key components of this support can be summarized in the following three activities:

1. The Feinstein Center carried out an impact assessment training workshop in Addis Ababa in October 2006. This training was attended by representatives from all seven projects. The training was designed to familiarize the participants in the concepts of participatory impact assessment (PIA) and introduce them to a variety of tools which might be used to assess project impact. During the workshop the participants were asked to design a comprehensive PIA plan for at least one major component of their respective projects.
2. Feinstein Center researchers carried out 'mid term' visits to six of the seven projects<sup>3</sup>. The primary objective of these visits was to work in partnership with the client communities to identify their own indicators of project impact. The visits did include other activities depending on the timing of the visit within the overall project timeframe. For example those projects that were visited prior to the PIA training workshop placed more emphasis on the basic concepts of measuring impact, whereas those visited towards the end of the project

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<sup>2</sup> Under the original proposal, FIC, Tufts were to support the development of the project M&E plans, and baseline surveys in a way that would capture impact. However the grant for the research component was only approved once the agency M&E plans had already been developed and most of the baseline surveys had been done.

<sup>3</sup> One of these mid term visits had to be cancelled at the last minute due to security considerations at the project site.

placed more emphasis on testing and demonstrating impact assessment tools, and training project staff in the use of these.

3. Using the PIA tools demonstrated during the training workshop and mid term visits, the implementing partner organizations were to carry out a final impact assessment of their projects. The Feinstein Center selected to support a comprehensive impact assessment of four of these projects. This report is the outcome of the final one of these exercises.

The overall goal of this research is to improve the ability of the humanitarian community to carry out impact assessment of its work and thus improve its effectiveness and accountability to the affected communities and donors.

### 1.2 Background to the Pastoralist Survival and Recovery Project (ARVIP)

Under the Sub-Saharan Africa Famine Relief Effort, Lutheran World Relief (LWR) in partnership with Contribution a l'Education de Base (CEB) have been implementing the Pastoralist Survival and Recovery (ARVIP) project in the Tarka Valley in North Dakoro, Niger.

The project was designed to assist 3,800 pastoralists living in the Tarka Valley recover from the effects of a prolonged drought, culminating in a failed harvest and locust attacks in 2004. 'The impact of the drought was further compounded by regional economic shocks and widespread cereal shortages resulting in rising food and animal feed prices'<sup>iii</sup>. In the project area, insufficient rainfall and locust attacks not only had a negative impact on crop production, but also severely affected grazing areas within the valley. The combination of poor pasture, insufficient water for livestock, and limited access and availability of animal feed resulted in high livestock mortality rates. Many households lost all their livestock assets, while others were forced to sell, slaughter or migrate with their animals<sup>iv</sup>. These livestock losses meant that pastoralist communities in the project area 'not only lost access to milk and protein - the mainstay of their diet, but also the income needed to purchase other critical food needs'<sup>v</sup>. Within an overall context of structural food insecurity, widespread poverty, and limited income earning options, LWR assessed that the situation in the Tarka Valley could rapidly deteriorate into a famine<sup>vi</sup>. Based on this situational analysis LWR and CEB developed the ARVIP project to help communities in Dakoro recover from the effects of these multiple shocks, but also to enhance their capacity to cope with similar shocks in the future. Within this framework, the overall goal of the project was to:

"Avert famine caused by drought and other shocks while strengthening community capacities to ensure year round access to income and food"<sup>vii</sup>.

The specific objectives of the project were as follows<sup>viii</sup>:

1. Improve household nutritional status and prevent starvation by restocking animal assets with small ruminants.

2. Decrease market vulnerability by increasing control over pastoralist terms of trade in order to increase year round access to food and feed.
3. Increase water access to improve human and animal survivability and reduce migration distances.
4. Improve pastoralist and farmer knowledge and collective management of land and natural resources in the Tarka Valley<sup>4</sup>.

In summary the project aimed to re-stock, increase control over terms of trade, and improve access to water, through the distribution of livestock, the establishment of animal feed banks, and the construction of wells.

The rationale for selecting these project activities was largely based on the experiences of similar activities being implemented by other NGOs in the greater project area, and the communities' acceptance of these projects. For example, during the 1984 drought, restocking activities using a traditional targeting mechanism called '*habbanaye*' had been introduced by CARE. The successful implementation and positive response to the restocking activities prompted both CARE and Oxfam to employ this strategy again in 2005, and LWR decided to extend the coverage of these re-stocking activities into the communities not being assisted by the other organizations<sup>5</sup>.

The re-stocking activities under the first objective were implemented in response to the decimation of livestock that had occurred as a result of the drought. LWR distributed 1,108 sheep in two batches to 297 recipients across the ten communities. The project had originally intended to distribute goats, however during a project planning exercise community participants indicated a preference for sheep which was accommodated by LWR and partners. The selection of recipients was done by each community during a planning exercise prior to the distribution. The criteria for selection were based on livestock asset levels, and selection was exclusively restricted to female community members. During the first distribution each woman received three ewes and one ram, the objective being that the ram would impregnate the female sheep and produce offspring<sup>6</sup>. The distribution was followed up with a vaccination intervention implemented by Veterinaires sans Frontiers (VSF) Belgium. Once the female sheep gave birth the original recipients got to keep the offspring and the original sheep were passed onto another recipient using the traditional mechanism called '*habbanaye*.' At the time of the assessment the original *habbanaye* sheep had been distributed and re-distributed to a total of 605 women. Under this activity each recipient was obliged

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<sup>4</sup> The original objective was to reduce drought-induced pastoralist-farmer conflict during migration. This was revised based on the findings of a participatory rural appraisal exercise. LWR now see this as part of a longer term goal and have initiated dialogue between pastoralist and sedentary groups within the valley.

<sup>5</sup> Both the project Coordinator (LWR) and the project Head (CEB) had previously worked for CARE in the project area, in this capacity they had both been involved in implementing similar projects with the same community.

<sup>6</sup> LWR realized this was too many rams and during the second batch the ratio of rams to ewes was scaled back to one male for every ten females.

to deposit between CFA 1000 - 3000 into a collective bank account as a form of health and life insurance for the habbanaye sheep. These funds have been used to cover the cost of treating sick animals and replacing those that have died. Table 1.1 shows a record of the account balances at the time of the assessment.

Table 1.1 Re-stocking guarantee funds November 2007

<b>Community</b>	<b>Account</b>	<b>Balance in CFA</b>
Azagor	1446	108 000
Bargass	1460	150 000
Fadama Rakouma	1469	177 550
Kadago	1449	128 000
Kouggou	1482	16 000
Koundoumi	1451	99 300
Marafa	1481	36 500
Zongon Issidey	1465	10 000
Zongon Kuzuru	1491	29 000
Paphel	1492	151 000
<b>Total</b>		<b>905, 350</b>

The habbanaye system is structured around informal women’s self help groups managed by an elected committee of five members. This component of the project provided management training in areas such as basic literacy and book keeping to the committees. Training in animal husbandry “veterinary care and nutrition” was also provided to the habbanaye recipients<sup>ix</sup>. One of the objectives of the capacity building activities was to transform these self help groups into more formal structures. These were then responsible for managing the habbanaye guarantee funds. At one point the group members had hoped to use these funds for micro-credit activities but LWR and CEB insisted that the funds be used for their originally intended purpose. Therefore group members decided to use the same mechanism as the insurance fund to organize their own savings and lending activities “*tontine*” with each member initially contributing 250 CFA per week to the micro lending fund. Technically the “*tontine*” was more of a project by-product than an actual intended project component.

Under the second objective the project aimed to reduce pastoralist’s vulnerability to market shocks by improving terms of trade. ‘In pastoral production systems livestock are not only used to produce milk and meat, but are also exchanged for cereals. In normal periods the terms of trade between livestock and cereals can be as high as 1:15 (Swift 1979, as cited by Catley 1999) meaning that a pastoralist can consume up to fifteen times the energy derived from one animal by exchanging it for cereals.<sup>x</sup>’ Typically during a drought, ‘animals are in poor condition, markets become flooded, demand for livestock goes down, as do livestock prices.<sup>xi</sup>’ On the other hand ‘because there is a drought the availability of cereals is low hence the demand and price of cereals goes up.<sup>xii</sup>’ In Dakoro, ‘Livestock are the only source of income for many pastoralists, and the sale of these provides the community with their only access to necessary staple cereals and livestock feed<sup>xiii</sup>’ Even during normal years, ‘food and feed prices will rise during the dry season, people cannot afford to buy fodder, consequently their livestock deteriorate, thus depleting potential profits from their sale.<sup>xiv</sup>’ As Catley (1999) observes; “The changing fortunes of pastoralists in

relation to the terms of trade in ‘good’ and ‘bad’ years is the key to understanding their susceptibility to food crises and, ultimately, famine.<sup>xv</sup>”

Based on this kind of reasoning the feed banks were designed to strengthen the terms of trade between livestock and cereals, by ‘ensuring year round access to affordable animal feed.’<sup>xvi</sup> By improving the availability and affordability of animal feed within the project communities, more livestock are expected to survive dry spells and droughts. These can then be sold once livestock and cereal prices return to normal. Alternatively the availability of livestock feed during a drought or dry spell helps livestock maintain their condition and to some extent their market value.

The actual implementation involved supporting the establishment of five herders associations, and the construction of six animal feed banks. The five herders associations each consist of one hundred pastoralist households from the ten communities. One of the key responsibilities of the herders associations was to manage the feed banks and other communal infrastructure.<sup>xvii</sup> In this capacity these bodies are expected to provide a vehicle for the collective procurement of animal feed and veterinary supplies<sup>xviii</sup>. It’s also anticipated that these associations will function as’ representatives of the community in livestock marketing and advocacy with the ‘Government and other actors.’<sup>xix</sup> The project provided training in functional literacy, procurement, inventory, book keeping and record keeping for the management committees of each herders association. The feed banks were designed to serve all ten communities and the location of the six feed banks was decided in partnership with these communities during the project planning forum.

The establishment of the feed banks involved the actual construction of the stores, training of the management committees, and the provision of an initial stock of ‘105 metric tons (MT) of animal feed, 10 MT of wheat bran and cotton seed, and 3 MT of salt blocs.’<sup>xx</sup> The land, labor and ‘local materials’ for the construction of the feed banks was provided by the community. The feed banks essentially function as ‘a combination of a storage facility, a cooperative, and a financial institution owned and run by the herders associations.’<sup>xxi</sup> By provisioning the banks when cereal prices are low, and by buying and transporting in bulk, costs are kept down, guaranteeing association members’ affordable livestock feed throughout the year<sup>xxii</sup>. The banks are designed to operate on a cost recovery basis, whereby ‘association members can purchase feed at cost price plus management fee.’<sup>xxiii</sup> The income generated from the sale of feed is deposited in a local bank account, and used for future stock purchases and management costs. Table 1.2 shows the balance of these accounts at the time of the assessment:

Table 1.2 Livestock feed bank funds November 2007

<b>Feed Bank/Community</b>	<b>Account</b>	<b>Balance (CFA)</b>
Fadoma Rakouma	1389	1, 755 000
Kadago	1396	1, 161 875
Marafa	1398	1, 689 500
Zongon Kuzuru	1403	733 000
Koundoumi	1438	982 000
Paphel	1393	1, 712 500
<b>Total</b>		<b>8,033, 875</b>

Under the third objective LWR and CEB supported the construction of four hand-dug wells in pasture areas previously not serviced by existing water points. In contrast to the traditional wells, these were capped above ground to prevent contamination, and accidents such as livestock or people falling into them. The overall objective of this component of the project was ‘to increase access to water for both human and livestock consumption.’<sup>xxiv</sup> The wells were intended to be strategically located in order facilitate access to new pasture and reduce grazing pressure on existing pasture. The feasibility studies for the location of the wells involved a stakeholder consultation which included the participating communities, the government hydrological services, and VSF, Belgium. The project established water management committees, these are responsible for the maintenance and repair of the wells. Financial support to cover maintenance is covered by obligatory contributions from each family utilizing the well; the size of these contributions is determined by the number of livestock watered per family<sup>xxv</sup>.

The conflict mitigation activities under the fourth objective were modified and will be addressed as part of a longer term strategy. Initially LWR had hoped to delineate and establish migration routes with the objective of avoiding potential confrontations between herders and farmers. LWR and partners did decide to implement the first phase of this strategy under the project. This was limited to initiating dialogue between pastoralist and sedentary communities.



## 2. ASSESSMENT METHODOLOGY

### 2.1 Study Design

Consistent with the overall goal of the project, the impact assessment was designed to look at changes in household food security and household income that had occurred as a result of the projects re-stocking and animal feed bank activities. The assessment also aimed to estimate the increase in livestock assets resulting from the re-stocking activities, this being a community defined proxy indicator of impact. The assessment was structured around two components. The first of these was a set of household interviews with project participants. These interviews were designed to collect quantitative data on changes in food security, income and expenditure patterns. The second component was a set of focus group discussions designed to collect qualitative data on project impact at the community level. The Focus Group Discussions included both project participants and non project participants.

## 2.2 Research Questions

5. What changes has the project had on the household food security status of the assisted communities?
6. What changes has the project had on household income (and savings) in the assisted communities?
7. To what extent have the projects re-stocking and animal feed bank components increased participants' resilience to drought?

## 2.3 Study Areas

The impact assessment was carried out in five communities living in the Tarka valley situated in Dakoro County which lies just over 500 km East of Niger's capital city Niamey. Approximately ninety percent of the people living in the project area belong to the Fulani (Peuhl) and Touareg ethnic groups, the Tagamawa and Hausa make up the remaining ten percent of the population<sup>xxvi</sup>. The total population of the ten villages participating in the ARVIP project is estimated to be 6,150, of these 3,800 belong to the 500 households directly participating in the project<sup>xxvii</sup>.

The Tarka valley is classified as an agro pastoralist production zone with annual precipitation ranging between 200-600mm. The predominant livelihoods practices involve transhumance livestock production and rain-fed crop production. Livestock assets include cattle, small ruminants, donkeys, camels, horses and some poultry. The main crops grown in the project area are millet, sorghum and cowpeas with millet being the most important.

Animal production is the most important economic activity in the project zone, with the majority of household income being generated from the sale of livestock and livestock products. Employment opportunities include seasonal agricultural work in neighboring areas, such as the commercial tiger-nut harvest. Men will also go to nearby urban centers such as Maradi in search of temporary employment. During drought years people will travel greater distances in search of employment opportunities with many going to Nigeria. Informal rural activities such as brick construction, mat weaving, wild food, fodder and firewood collection and sales are also important economic activities. Again some of these informal activities will be expanded upon in order to cope with the effects of a poor harvest or drought.

## 2.4 Sampling

### 2.4.1 Study Locations

The assessment took place in five of the ten communities participating in the project. The actual locations visited were the villages of Fadama, Bargass, Kadago, Koundomi, and Marafa, although no household interviews took place in Kadago, and no focus group discussions took place in Koundomi. These communities were selected by LWR based on the fact that they benefited from at least two of the three project interventions. Other considerations that influenced the selection included ethnic diversity, the presence of project participants at the time of the assessment (since some level of migration had started),

and accessibility (distance) from Dakoro town. The assessment team spent a day in each of the villages with an overnight stop in some of the villages.

#### 2.4.2 Method and Size

The overall sampling frame for the assessment was the 500 households or (3,800 people) participating in the project. Twenty seven men and thirty six women from four out of the ten project communities (40%) participated in the household interview component representing just over twelve percent of the overall sampling frame. Participation in the household interviews was voluntary although limited to households that had participated in at least two of the project activities.

Table 2.1 Sampling for household interview (HHI) component

Name of Village	Male	Female	Total # HHs
Bargass	3	6	9
Fadama	12	6	18
Marafa	3	15	18
Koundomi	9	9	18
<b>Total</b>	<b>27</b>	<b>36</b>	<b>63</b>

A total of five Focus Group Discussions were held in the four communities visited. Participation in these discussions was voluntary and included both project and non-project community members.

Table 2.2 Sampling for the Focus Group (FGD) component

Name of Village	Male	Female	Total # HHs
Bargass	45	50	95
Fadama	30	40	70
Marafa	10	20	30
Kadogo	14	24	38
<b>Total</b>	<b>99</b>	<b>134</b>	<b>233</b>

#### 2.4 Data Collection Methods

At each assessment site visited the LWR/FIC team held a meeting with community members to explain the objectives of the exercise and the participatory tools that were to be used. The meetings were used to identify project participants that would be willing to take part in the household interview (HHI) component of the assessment. Once the HHI participants had been identified they were split up into groups; women alone and men alone. Two teams consisting of two enumerators would then carry out the household interviews with these groups. The remaining community members attending the group meeting were then invited to participate in the focus group discussion.

The assessment team comprised three CEB staff, one LWR consultant, one LWR staff and a FIC consultant and a Tufts research assistant. The HHI were undertaken by the CEB project staff and the one LWR consultant. Typically this was done by collecting responses from a group of up to six household

representatives at one time, with one enumerator interviewing and the other recording responses in a standardized format. The focus group Discussions were facilitated by the FIC consultant and the LWR staff member. .

The household component of the assessment focused on collecting quantitative data on people's perceptions of change regarding household food security income and expenditure. The primary data collection tool for the household component was a semi structured interview. These interviews were structured around two participatory methods viz. impact scoring and before and after scoring, these were conducted using visual aids. Following these exercises participants would be asked if they had noticed an improvement in household food security or household income and if so to explain the reasons for this change. This was done with the objective of attributing the change to either project or non-project factors<sup>7</sup>.

The Focus group discussions also used a semi structured interview to collect community level perceptions on project impact. These sessions were also used to collect community definitions of food security, and where relevant to estimate the potential time savings on water collection provided by the project wells. A SWOT exercise was also done during each focus group discussion with the aim of collecting community

perceptions on the strengths and weaknesses of the project, as well as potential opportunities and threats. Livestock mortality, stress sales, stress slaughtering, and out migration estimates were also collected during these discussions.



A community timeline was developed using key informants, this was done outside of the household and focus group component of the project.

#### **Using visual aids to assess impact**

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<sup>7</sup> The participatory methods used are described in detail in Burns, J and Suji. O (2007) *Impact Assessment of the Chical Integrated Recovery Action Project, Niger* November 2007 available at <http://fic.tufts.edu>

Table 2.3 Summary of methods used

<b>Method</b>	<b>Use/Issue</b>	<b>Sample</b>
Impact scoring	To: <ul style="list-style-type: none"> <li>determine the relative importance of different project benefits at the household level</li> </ul>	63
Before and after Scoring	To measure: <ul style="list-style-type: none"> <li>relative changes in the contributions of different food sources to the household food basket</li> <li>relative changes in the importance of different income sources</li> <li>relative changes in household expenditure</li> </ul>	63
Before and After Proportional Piling	<ul style="list-style-type: none"> <li>To determine utilization of milk production</li> </ul>	2
SWOT analysis	<ul style="list-style-type: none"> <li>To collect community perceptions on the projects Strengths, Weaknesses, Opportunities &amp; Threats</li> </ul>	5
Focus Group Discussions	To : <ul style="list-style-type: none"> <li>collect qualitative community level perceptions of project impact</li> <li>triangulate data from household interviews</li> <li>quantify terms of trade</li> <li>collect data on the perceptions on the projects strengths, weaknesses</li> <li>collect information on perceived changes in food security</li> <li>collect community definitions of food security</li> <li>estimate changes in livestock health and mortality</li> <li>estimate time savings on water collection from the projects well intervention</li> </ul>	5
Key Informant Interview	<ul style="list-style-type: none"> <li>To develop a community timeline defining the temporal boundaries of the project</li> </ul>	1
Semi Structured Interview	<ul style="list-style-type: none"> <li>used with all methods to determine attribution, cross check information, and clarify responses</li> </ul>	NA

## 2.6 Data Analysis

The quantitative data from the before and after scoring and impact scoring exercises was tested for normal distribution using the P-P plot function in SPSS. A comparison of mean scores from the before and after exercises was calculated at 95% confidence interval using SPSS. The relative mean score of project benefits derived from the impact scoring exercises was calculated using Excel.



### 3. RESULTS

#### 3.1 Timing of the Intervention

##### 3.1.1 Timeline of historical and recent events in the project area

- 1984** Major Drought - food could only be smuggled in from Nigeria. (General Buhari became President of Nigeria). Many animals died and the community became destitute. Red Cross set up feeding centers for women and children in Dakoro. Men went to Nigeria in search of food.
- 1996** Drought and Locust Invasions. Poor rainfall resulted in a small harvest. The grass was eaten by locusts - there was no pasture for livestock. The community migrated to the south (Nigeria) - half of the population has still not returned. Some abandoned their livelihood and became Imams. One man from the community lost all his livestock and committed suicide, another one fell into a well and died rather than face the death of his last few animals. One man took a knife and started to slit his throat as he watched his animals die one after another and was only rescued by his family members and taken to hospital in Dakoro. Those members of the community who chose to stay resorted to a number of coping mechanisms. Some sold firewood; some went to Dakoro to make bricks for sale. Women made mats while others worked threshing millet for the richer members of the community.
- 2004** Failed rains and poor harvest followed by a deterioration of pasture which ultimately led to the severe drought of 2005.
- 2005** Drought (poor harvest) and death of livestock due to lack of pasture. NGOs such as Oxfam brought us food aid under the 'cash' for work program and paid with food vouchers worth 7,000 CFA per week which we exchanged for food at specific shops in Dakoro. Oxfam also did de-stocking buying and slaughtering animals that were about to die for about 30,000 CFA for a cow and 40,000 CFA for a bull. This money was paid in the form of food vouchers which we then used to purchase millet and some animal feed from the shops for our remaining animals. This was the first time some of the community members had seen a vehicle at close range. In order to cope, women would go out to the forest to forage for wild foods such as "agua", "anza", "djigger", "danya" and "adua". We even used cassava flour to make food which for the community is used only when the situation is really bad.
- 2006** ARVIP came to the community at this point when the situation was really bad. ARVIP gave the Habbanaye animals (small ruminants) to our women helping in the re-stocking efforts.
- 2007** Good rainfall and a good millet harvest. The ARVIP interventions helped us to re-stock effectively. We have been able to sell some of the offspring to buy bigger livestock. We have learned new ways of coping. One method is to collect millet from all the women during harvest time when the prices are low and then give it back to them during the drier season when the prices double. This has helped to provide food for families at low cost. However the efforts are minimal since we do not have storage for the grains we gather. The women said they have developed savings skills through the 'tontin' when we lend to each other and it is paid back within a month at ten percent interest. However, because the amounts involved are small, the money is used mainly for buying food for the household, contributing to ceremonies and occasional travels.

### 3.2 Drought Coping Strategies

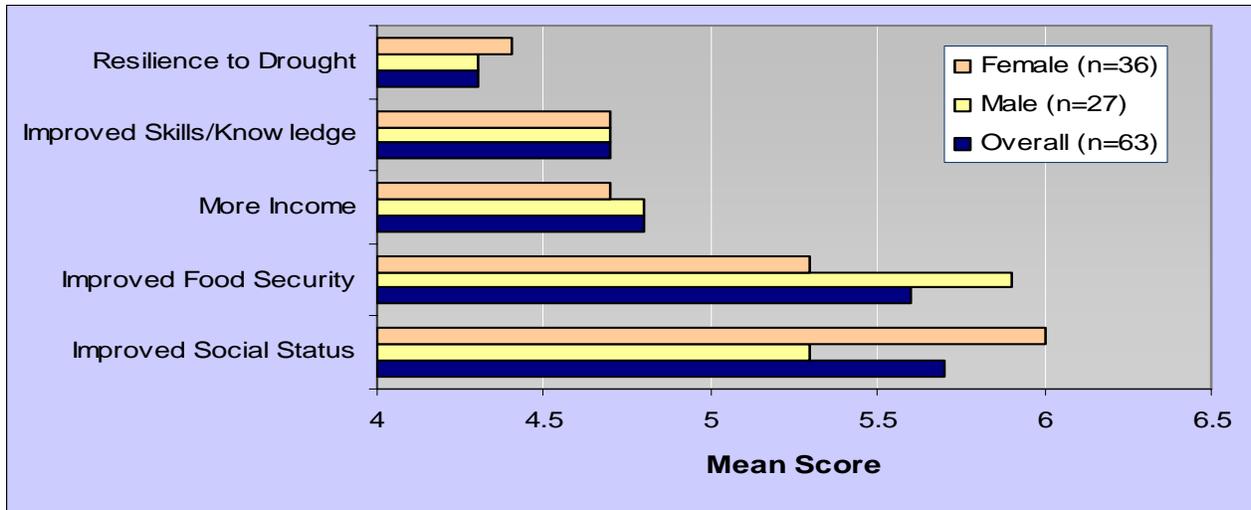
Table 3.1 Common household coping strategies in the Tarka Valley

Coping Mechanisms	
1	De- stocking to save remaining livestock and purchase food ( <i>early stages of drought</i> )
2	Stress sale of livestock at reduced prices in order to purchase millet ( <i>later stages of drought</i> )*
3	Migrate to other areas (even Nigeria) in search of better pasture
4	Men go to Maradi or even Nigeria in search of employment in order to buy food and send remittances
5	Expand on informal income generating activities such as mat weaving and firewood collection
6	Expand on the consumption of wild foods
7	Sell other household assets in order to purchase food
8	Permanently migrate to other areas with better pasture
9	Permanently migrate to urban areas and give up agro-pastoralist livelihoods practices

Data derived from individual semi structured interviews, focus group discussions, and secondary data (not ranked in order of importance)

### 3.3 Project Benefits

Figure 3.1 Relative mean score of project benefits

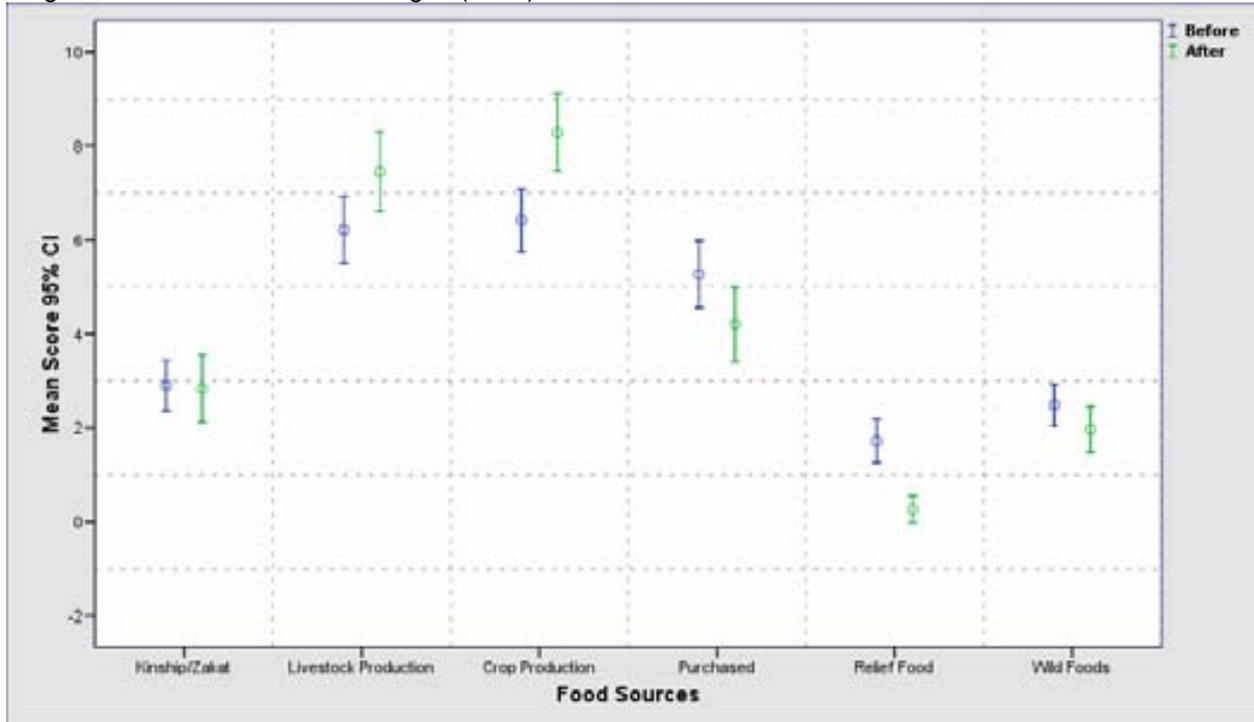


Data was derived using impact scoring with twenty five counters

### 3.4 Food Security

#### 3.4.1 Food Basket Contributions

Figure 3.2 Food basket changes (n=63)



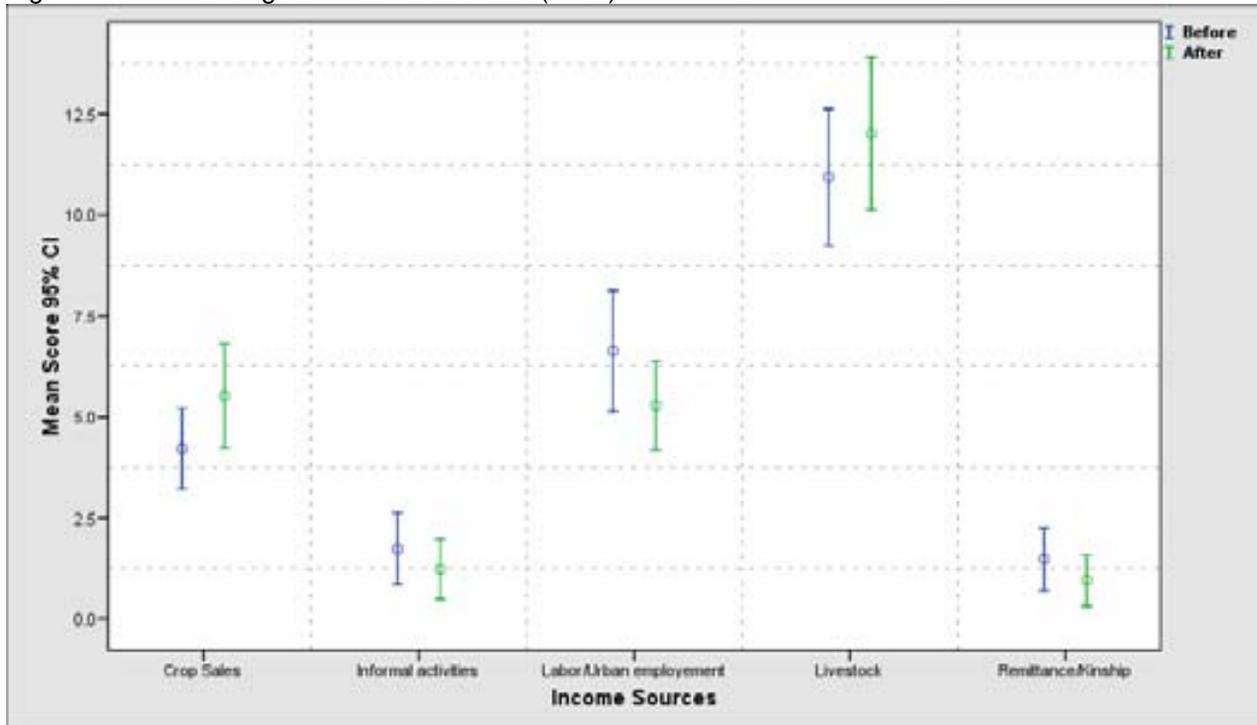
Data derived from before and after scoring using twenty five counters.

#### 3.4.2 Key Reasons Given for Improvements in Household Food Security

1. Increased livestock production as a result of improved livestock health (feed banks)
2. Increased milk production as a result of improved livestock health (feed banks)
3. Increased crop production and consumption as a result of better rainfall
4. Increased income to purchase food (from the sale of livestock and livestock products)

### 3.5 Income

Figure 3.3 Changes in income sources (n=63)



Data derived from before and after scoring using twenty five counters

#### Notes

Livestock includes sale of livestock, milk, meat, and hides

Informal activities includes mat weaving, handicrafts, brick making, and the collection and sale of fodder and wild foods

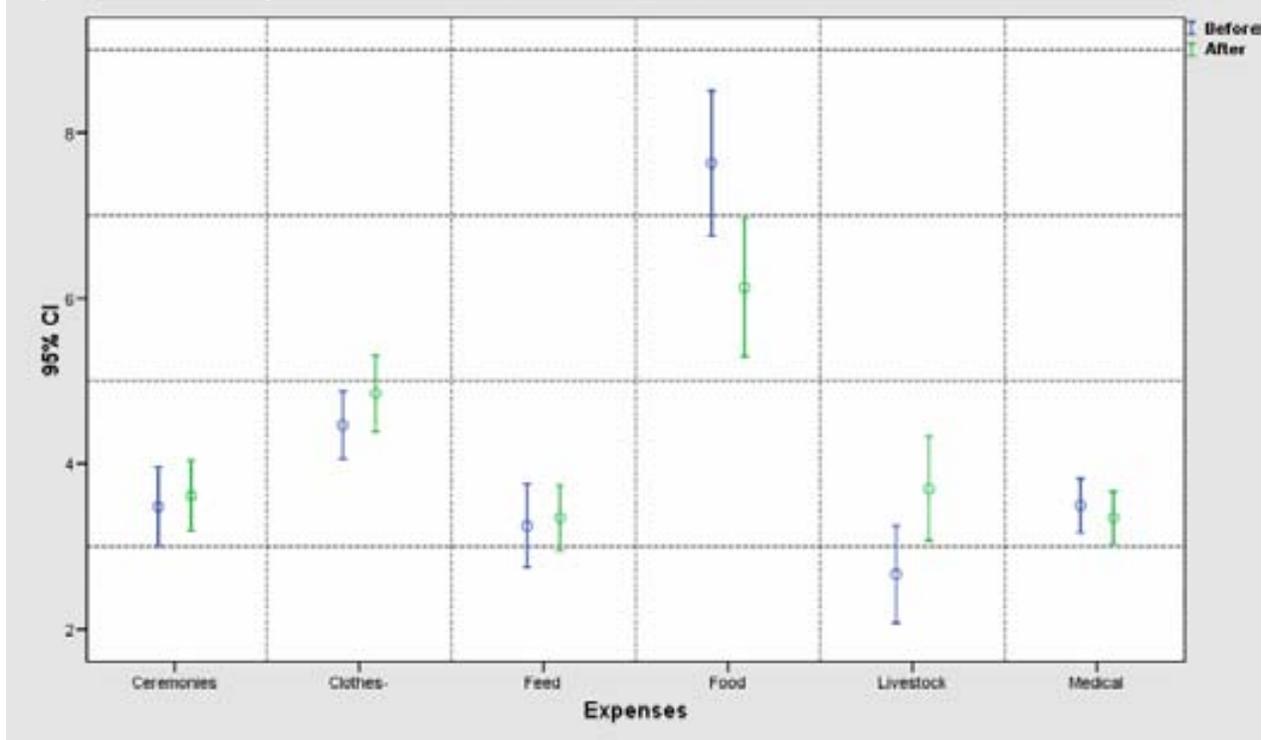
Labor/employment includes any income derived from either urban or rural based employment

#### 3.5.1 Key Reasons Given for Improvements in Household Income

1. More millet to sell from an improved harvest (better rainfall)
2. More livestock to sell due to an increase in overall livestock assets (feed banks/habannaye)
3. More milk to sell due to more livestock and healthier livestock (feed banks/habannaye)
4. Healthier livestock fetched better prices at the market (feed banks/habannaye)
5. New source of income from the sale of male habbanaye offspring
6. Income in the form of savings from cheaper livestock feed (feed banks)
7. Savings on re-stocking (habbanaye)
8. Savings on food (millet and milk)

### 3.5.2 Expenditure

Figure 3.4 Changes in Household Expenditure (n=63)



Data derived from before and after scoring using 25 counters

### 3.5.3 Key Reasons Given for Changes in Household Expenditure

1. Less money spent on food as we had a good harvest
2. Less money spent on food as we had more milk from our livestock
3. We have more money to invest in livestock (income & savings)
4. We had more money to spend on clothes

### 3.6 Livestock

Table 3.2 Livestock asset transfers from re-stocking exercise

Village	Bargas	Fadama	Marafa	Koundomi	Kadago	Total
Number of Habbanaye sheep distributed	146	146	120	120	113	645
Number of Habbanaye offspring born	167	165	108	122	93	655
Number of Habbanaye sheep died	16	NA (15)	16	NA (12)	7	39 (66)
<b>Accumulation</b>	151	165 (150)	92	122 (110)	86	329* (589)

#### Notes

Data derived through consensus from focus group discussions. Mortality rates were not available from Fadama and Koundomi village. Estimated mortality rates are shown in parenthesis, using a 10% estimated loss on the original number of sheep distributed. This estimate (10%) was arrived at using the mean mortality rate from the three villages where the data was available.

\* Therefore the figure 329 is the actual livestock accumulation (total) based on the mortality data from the three communities, the figure 589 in parenthesis is a hypothetical figure from all five communities, assuming a 10% mortality rate from the two communities where this data was not available.

Table 3.3 Terms of Trade

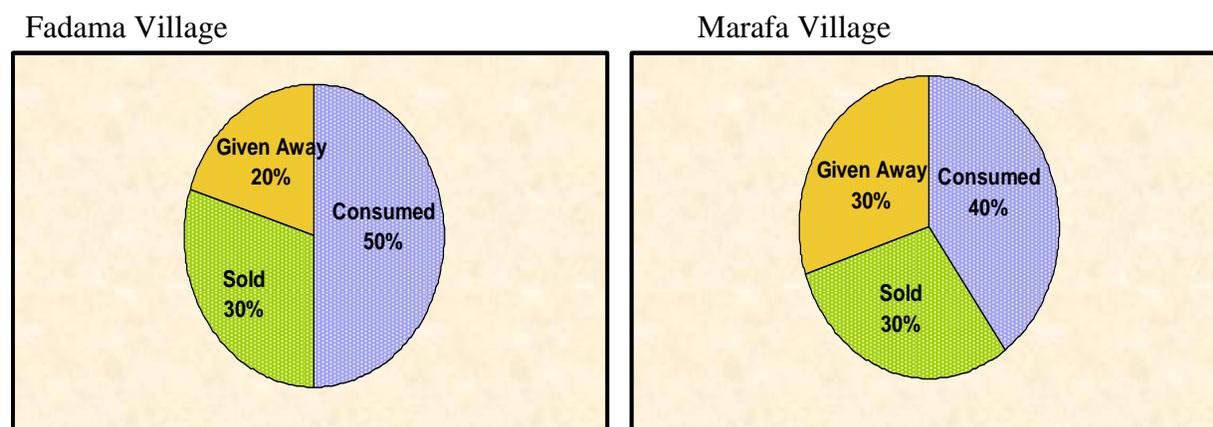
Average price estimates in CFA	Bargas	Fadama	Marafa	Koundomi	Kadago	Average
Ram between June-Sept (hungry season 'Bazara')	20,000	15,000	20,000	NA	20,000	18,750
Ram between October – December (harvest 'Kaka')	38,000	30,000	33,000	NA	30,000	32,750
One tia millet between June-Sept (hungry season)	450	600	450	NA	500	500
One tia millet between October-December (harvest)	225	250	250	NA	250	243.75

#### Notes

The data was collected through consensus from focus group discussions.

A 'tia' is a local cereal measurement - one tia represents approximately 2.5 kg

Figure 3.5 Utilization of milk resulting from increased production



Data derived using proportional piling with ten counters (focus group participants)

### 3.6.1 Key Reasons Given for Improvements in Animal Health

1. Availability and quality of animal feed from the feed banks (wheat-bran and cotton seed)
2. Animal husbandry training
3. Improved water quality from the project wells
4. Less time spent watering and more time spent grazing (project wells)

### 3.6.2 Key Benefits/ Outcomes Resulting from Improved Animal Health<sup>8</sup>

1. Increased herd size from reduced mortality and increased number of births
2. Increased milk production from healthier livestock
3. Increased milk production from more livestock
4. More income from the sale of milk and livestock
5. Better retail prices for healthier livestock = more income
6. Improved social status through increased livestock ownership
7. More manure to fertilize our millet fields



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<sup>8</sup> The increased rainfall would also have resulted in better pasture which would have had a positive impact on animal health - this factor was not mentioned by any assessment participants.

### 3.7 Strengths and Weaknesses of the Project

Table 3.4 SWOT analysis

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Families that did not have animals before now own livestock - Children from these families have learned herding skills</li> <li>• We now have food for our animals in times of drought (from the feed banks)</li> <li>• Every household in the community now owns livestock (Fadama Village) as a result of the habbanaye – This has improved our overall status as a community.</li> <li>• The animal feed was ‘ a very sweet benefit and it saved our animals from certain death’</li> <li>• The wheat bran (feed) improves milk production and helps animals fatten quickly)</li> <li>• Social cohesion has been enhanced especially among women as a result of the ‘tontine’ (savings scheme).</li> <li>• Savings groups have been established within the community</li> <li>• The animals we received have helped us to rebuild our herds</li> <li>• The ‘habbanaye’ has helped us to meet household needs -We have more income from milk and livestock sales</li> <li>• We can sell the male habbanaye offspring to cover our daily needs.</li> <li>• The project has created better solidarity and social cohesion (Marafa Village)</li> <li>• We have established a sheep replacement fund.</li> <li>• We have developed a good relationship with CEB</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Animals were given only to women yet men are the ones responsible for buying feed</li> <li>• The mother sheep should be allowed a longer time with the offspring rather than sending it off as soon as it is born (redistribution from the habbanaye should not occur as soon as the offspring are born)</li> <li>• Some of the dead sheep were not replaced</li> <li>• The literacy program was too short to be effective</li> <li>• Lack of agreed exit plan is making us very anxious as some project members may hide the sheep and this could cause conflict within the community. - <i>it wasn't clear that the habbanaye sheep would remain in the community once the project ended – people thought they would have to return these animals – LWR addressed this issue during an exit strategy exercise carried out in partnership with the participating communities (see annex 4).</i></li> <li>• Some recipients did not take good care of the animals while some sold the habbanaye animals</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• The habbanaye should consider giving animals to men as well this would enhance community stability</li> <li>• Management committees have developed skills through the project, these skills can be applied to other activities in the future.</li> <li>• We discovered that when we wash off the millet after pounding we are now feeding the water to the (habbanaye) sheep and we realize this is very nutritious</li> <li>• Our herds are growing from the female offspring of the habbanaye animals. Selling the male offspring has provided us with an income which we can use to purchase more female animals</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Another drought could wipe out all the gains made by this project and yet we have no control against future drought</li> <li>• In case of divorce, women will leave with their animals and this could create disharmony within the community</li> <li>• There was inadequate feed in the feed banks for all the animals</li> <li>• Some of the participants failed to adhere to the rules of the project - If the other (habbanaye) recipients break the project rules and sell the animals they will be back to where they began.</li> <li>• If the saving program fails then there will be no cushion for the women in hard times.</li> </ul>

## 4. DISCUSSION

### 4.1 Methodological Issues

There were a number of challenges involved in the assessment design, data collection and analysis. During a mid term field visit to the project, the Feinstein Center, LWR and CEB worked in partnership with the participating communities, to collectively determine the best way to measure the projects impact. During this visit a number of impact indicators were collected from the community. Essentially the only real measurable indicator of project impact, that would be expected within the timeframe of the project was, an increase in livestock assets. Re-stocking participants determined that what they ultimately wanted was to breed enough sheep, so that eventually they could sell some of the offspring, in order to purchase a cow. Ultimately the long term benefits of the re-stocking would be measured in terms of household milk consumption, and income earned from the sale of milk products (sour milk/yogurt) derived from these cows<sup>xxviii</sup>. Clearly the timing of the assessment, after two years of project implementation would not be able to capture these benefits<sup>9</sup>. Therefore participants suggested that the best indicator of impact would be the number of sheep born from the re-stocking exercise, these representing the increase in herd size that might eventually lead to household ownership of a lactating cow<sup>10</sup>.

The other benefit that the re-stocking participants attached to the habbanaye sheep was the insurance that the offspring would provide in the event of a drought. At the time of the mid term visit, key informants in the community were predicting a drought on the scale of 2004/2005. This never happened but the re-stocking participants indicated that if it did materialize, that they would sell the habbanaye offspring in order to purchase millet. These transactions would have been well captured in the before and after scoring exercises of food and income sources and expenditure patterns, and would have also demonstrated impact in terms of people's resiliency to drought. Fortunately there was a good harvest in 2007 and people did not need to sell their habbanaye offspring in order to purchase food, as they would rather aim for the longer term objective of converting these assets into cattle. However, this made it difficult to quantify the impact of the project in terms of food and income transfers, and indeed the results don't show significant changes in these categories. Therefore the discussions on impact, and the arguments presented in this narrative are largely drawn from the qualitative data and secondary resource material.

Similar issues applied to measuring the impact of the animal feed banks. Community indicators of impact included reduced livestock mortality, reduced stress sales and slaughter of livestock, a reduction in out migration of people and livestock, and an increase in milk production. Most of these indicators would only be applicable to a drought year and so there was not much point in trying to quantify these.

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<sup>9</sup> Although sheep (♀♀) also produce milk, in Dakoro ewe's milk is rarely consumed as milking sheep tends to adversely affect the health of the lambs.

<sup>10</sup> Focus group participants in Marafa village estimated that you would have to sell four adult sheep to purchase a two year old calf – it's possible that this calf might conceive and start lactating at three or four years old.

There were also problems in specifically attributing improvements in household food security and income to a particular cause or project intervention. Originally attribution was to be measured by asking participants if there had been any improvements in food security or income, and if so to give the reasons for these changes. During the analysis, all the reasons given would be categorized, and then tallied to give a score. The most frequently mentioned factors would therefore score highest, giving a rough representation of their relative importance in comparison to other factors. The team spent the duration of the assessment in the villages and there was no time to review these responses until the data collection had been completed. The eventual results from these exercises attributed improvements in food and income to several factors making the assigned scores fairly meaningless. For example reasons for improved food security included:

1. 'we get more income and milk from our livestock because of the feed bank and habbanaye'.
2. 'we can get more income from our livestock because they are now healthier'
3. 'we now have livestock to sell in order to meet our needs'
4. 'we are more food secure because our livestock are healthier as a result of the feed bank and well'

There is obviously plenty of overlap in the responses with income, or even potential income also representing food security. Part of the analysis therefore involved trying to unpack and synthesize these responses. Ultimately the common denominator for improvements in food security and income attributable to the project appeared to be an improvement in animal health and livestock production. In hindsight it would have been better to identify all the factors contributing to improved food security and rank these in order of importance. The decision not to do this was influenced by the limited French (and local) language skills of the FIC, Consultant overseeing the assessment, and some of the tools were simplified to accommodate this limitation.

It should be noted that this analysis of attribution is the interpretation of one person and may be somewhat subjective. It should also be emphasized that the analysis of attribution largely forms the basis of the narrative interpretation of the results. Both the quantitative and qualitative analysis of the results was done by a FIC researcher who participated in the mid term project visit, but who did not participate in the actual field component of the final assessment.

The livestock to cereal conversions presented in the narrative section on food security are purely theoretical and should be viewed as rough estimates. One of the units of measurements was an adult ram. In reality at the time of the assessment none of the offspring from the re-stocking exercise would be adults, and so their market value would have been somewhat exaggerated. The key assumption being that people will only sell their sheep if there is another drought, at which point the habbanaye offspring will be adults. In reality the estimates presented in the narrative are conservative, being based on the low season prices for livestock, and using existing numbers of sheep (offspring) as opposed to the projected number of sheep.

Nevertheless if another drought were to occur even as early as next year (2008/2009) the market price of sheep and the cereal livestock terms of trade would be different from the estimates used in this report.

#### 4.2 Food Security

Across the five villages assessed, food security was defined as the availability of either millet or livestock. Participants explained that ultimately livestock assets could be sold and converted into millet, and in this respect they are perceived as a form of insurance against food insecurity. Household food security was collectively scored as the second most important project benefit, with male respondents scoring it as the most important.

The results indicate that the most important food sources in the project area come from crops and livestock production. Since the project started there have been some changes in the contributions of the different food sources (figure 3.2), with the most significant changes being an increase in the contribution of food coming from own production (crops), and a decline in the amount of food coming from relief aid. Project participants largely attributed these changes to a better millet harvest resulting from favorable precipitation in 2007. Some participants in the villages that had benefited from the projects well intervention also suggested that the time spent on water collection, was now spent on their farms, and in part this may have contributed towards improved production. However, the disaggregated results from these two villages shows an even smaller mean increase in food from on farm production than the combined results, suggesting that this was probably not an important factor.

The findings also show an increase in the portion of the food basket now coming from livestock production. Although not statistically significant livestock production went from representing twenty four percent (mean score) of the household food basket before the project to thirty percent after the project; and the most frequently mentioned factors contributing towards an 'improvement' in food security by household participants had to do with an overall improvement in animal health and livestock production.

Improvements in animal health were largely attributed to the availability and affordability of animal feed from the project feed banks. The availability and improvement in the quality of water for livestock consumption, provided by the project wells was also cited as an important factor. Improvements in livestock health were said to have contributed towards food security in a number of ways. Project participants maintained that they were now getting better prices for their livestock in the market, providing them with more income to purchase millet and other household food items. Secondly improved livestock health has resulted in better milk production, an increase in livestock births, and a reduction in livestock mortality. People therefore have more livestock and milk to sell, and the income from this source can be converted back into cereals for consumption. Thirdly there has been an increase in household milk consumption due to improved production. Results from two focus group discussions indicate that most of this milk is consumed within the community (roughly 70%) while the rest is sold. Between forty to fifty percent of the milk produced is consumed within the household, therefore an increase in production is likely to have had direct nutritional benefits at the household level.

It would be fair to assume that the improved rainfall in 2007 would have resulted in better pasture thus boosting milk production and overall animal health. However, this factor was not mentioned by either the household or focus group participants, and is therefore probably perceived to be of less importance than the project related factors.

Other reasons given for the improvement in food security also related to livestock production. Some participants suggested that the projects training activities had improved their animal husbandry skills, resulting in improved production and livestock births. More specific to the re-stocking exercise, participants said that they were now able to sell the male offspring of the habbanaye sheep in order to purchase millet.

The results show a reduced dependency on food purchases, this is most likely explained by the increase in cereal and milk production, and in this context it represents a positive trend in terms of household food security. This is interesting as changes in food security were mostly attributed to an improvement in people's ability to purchase food, using income derived from the sale of livestock, and livestock products; The results from the before and after scoring exercise seem to contradict this showing a decline in the relative contribution of food purchases towards the overall household food basket (figure 3.2). Similarly the results from the before and after exercise on expenditure appear to confirm this trend showing a reduction in the amount of household income being spent on food (figure 3.4). This apparent contradiction might be explained in that the results from these particular exercises represent a relative as opposed to an absolute decline in the contributions of the different food sources.

A more plausible explanation follows if we unpack the community definition of food security. Essentially livestock assets are viewed as a form of food security currency that can be converted into millet when needed. From this perspective project participants would see livestock assets as an indicator of long term food security in contrast to millet which would represent more of a short to medium term indicator. Therefore an increase in livestock assets would be equated with improved food security not only on the basis of the actual or current cereal exchange rate of the livestock, but also on their potential (future) cereal exchange value. The unusually good millet harvest experienced in 2007 would diminish the importance of the current livestock-cereal exchange rate, and shift the emphasis to the potential food transfer that these livestock represent. In less abstract terms this potential food transfer can be hypothetically estimated as follows:

At the time of the assessment 1002 lambs had been born from the original habbanaye ewes distributed in all ten communities. Assuming a ten percent mortality (see table 3.2), and using the average price of a ram (see table 3.3), the cash value of the remaining 902 sheep would be roughly CFA 16912500 (\$ US 37, 583<sup>11</sup>) if these were sold during the hunger period when livestock prices are at their lowest. If this cash was then used to purchase millet during the same period when cereal prices are at their highest, it would translate into approximately 84562.5 kg of millet. Assuming a minimum cereal requirement of 500 grams

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<sup>11</sup> Using and exchange rate of 1 USD = 450 CFA

per person per day, this quantity would translate into forty six days of ‘cereal security’ for each household participating in the re-stocking<sup>12</sup>. Alternatively this amount would be enough to cover the cereal requirements of every individual in all ten communities for just over twenty seven days. Although less likely, if the same conversions were done between October and December it would translate into roughly a hundred and sixty six days of cereal security for participating households or ninety eight days for the entire population. For sure these estimates are hypothetical, during a drought some livestock would die, and livestock prices would drop. On the other hand by the time the next drought occurs one would expect herd sizes to have increased, and the feed banks would act as a buffer against mortality and market devaluation.

#### 4.3 Income

The results from the ‘before and after’ scoring exercise show no significant changes in the relative contribution of different income sources at the household level. Nevertheless a number of positive trends are reflected, and project participants maintained that they had experienced an overall improvement (increase) in household income since the project began.

Livestock production remains the most important source of income in the project area and the results show a five percent (mean) increase in the relative importance of income from milk and livestock sales since the project started. This constitutes almost half of overall household income, the significance being that this represents a year when the relative contribution of income from crop sales increased as a result of an unusually good harvest.

Most of the reasons given for changes in household income had to do with an increase in income derived from the sale of crops, livestock, and livestock products, and the savings made on cereal, milk, livestock and animal feed purchases. Focus group participants estimated an average saving of about CFA 1000 per 50 kg bag of feed purchased at the feed bank, as opposed to on the open market<sup>13</sup>. The increase in crop sales was largely attributed to improved millet production resulting from favorable precipitation in 2007. This also accounted for the savings made on millet purchases as a greater portion of the household cereal budget is now being met through production as opposed to purchases. As mentioned in the previous section, the positive changes in income from livestock production resulted from an increase in the number, and an improvement in the health of household livestock assets. Again these improvements can be directly linked to the feed banks, wells, and re-stocking components of the project.

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<sup>12</sup>‘Cereal Security’ is not an accepted technical term – here it is used to differentiate the portion of daily energy requirements derived from cereals alone – WHO/FAO estimate 21,00 kilocalories to be the minimum daily energy requirement for an active healthy adult, approximately 70% of this energy would come from cereals. 500 grams of cereal/person/day is a rough planning estimate which for millet would translate into 1,675 kilocalories putting it slightly above the minimum threshold.

<sup>13</sup> Animal feed is typically only purchased during two seasons (*Dari & Rani*) between December and June - there are price variations during this period. This estimate takes the mean savings derived from the average price for each of these two seasons.

The results show a slight decline in the importance of income derived from labor. Household participants offered the explanation that since the project began, income from livestock production had increased offsetting the need to migrate to urban areas in search of work. Generally speaking people will expand on labor options during drought years and so a reduced dependency on this source of income represents a positive trend.

There were no significant changes in household expenditure patterns since the project started although there has been an increase (roughly 4%) in the proportion of income being invested in livestock. Typically people will convert income into livestock assets during good years as insurance against drought, at which point people will sell these animals in order to purchase millet. There was also a slight increase in the portion of household income spent on clothes and traditional ceremonies. Project participants suggested that they now have more disposable income to cover these expenses due to savings made on millet and animal feed purchases, and income derived from the sale of crops, livestock and milk. There was no significant increase in the proportion of income being spent on animal feed, although more disposable income and cheaper feed prices would offset the expected increase in feed purchases that would be expected, given the overall increase in livestock numbers. The biggest change in expenditure patterns was a reduction in income spent on food. Again as mentioned earlier, this finding is also reflected in the results from the food scoring exercise which shows a reduction in the importance of food purchases to the household food basket.

#### 4.4 Other Project Benefits

There were a number of other project benefits mentioned by participants during both the final assessment, and previous field visits by the Feinstein Center.

During focus group discussions in Marafa and Koundomi community members estimated that they were now saving about half the time they used to on domestic water collection, and watering their livestock. This time saving was attributed to the project wells. Before the new well was built in Marafa different sectors of the community were allocated specific times when they could use the old well. “Livestock” were given priority and women who are generally responsible for collecting water for domestic use, and food preparation ‘used to get home so late that they would often have to wake up their children for the evening meal’. With the new well, the pressure has been so reduced, that by early afternoon all the livestock have been watered and the wells are practically deserted. As a result of this the women said they can now get the evening meal prepared much earlier than in the past. Also mentioned was the time saved on watering livestock, allowing more time to be spent searching for better pasture, again contributing to improved animal health.



**The old well at Marafa early afternoon 2007**

During an earlier field visit participants in Marafa also mentioned the time savings and security benefits from the feed banks. In the past they would have to travel to Dakoro to purchase animal feed, the return trip would take two days, and they might get robbed on the way<sup>i</sup>.

Focus group participants estimated the transport savings provided by the feed banks ranged between CFA 900- CFA 3000 per trip depending on the village.

Although difficult to quantify, the most important overall project benefit scored by project participants was the improved social status that came with owning livestock. Women ranked this benefit higher than men although many of these were habbanaye recipients who, had either never owned livestock before the project, or who had lost all their livestock during the drought. Focus group participants also mentioned that the social status of the community as a whole had improved with the collective increase in livestock assets that had occurred as a result of the project.

The micro lending activities “*tontine*” that evolved out of the habbanaye component could be seen as a positive unintended impact of the project. Although the impact of these activities was not assessed, participants suggested that the lending groups had helped to strengthen social cohesion especially among women. The establishment of these groups was also mentioned as one of the strengths of the project.

## 5. Conclusions

The original goal of the project was to ‘help pastoralists in the Dakoro region avert famine caused by drought and other shocks, while strengthening their capacities to access food and income throughout the year’<sup>i</sup>. Consistent with this goal, the assessment set out to investigate what impact the pastoralist survival and recovery project has had on the food security and income status of the participating households. It also looked at how the projects livestock components have helped to improve people’s resilience to drought. Seeing as the assessment coincided with an exceptionally good harvest, it was difficult to determine

whether or not the project has helped to avert a famine. However, the findings indicate that it has improved people's access to food and income and improved their ability to cope with future droughts and other shocks.

Although the assessment did not set out to measure changes in animal health, the results suggest that the project has had a considerable impact on livestock health and livestock production. This improvement in animal health was almost exclusively attributed to the project, and has directly and indirectly translated into food security and income benefits for the participating households. Although not statistically significant, the results show an increase in the proportion of household food now coming from livestock production arguably representing an important food security change in the lives of the project participants. Supporting this assertion, the most frequently mentioned reasons for improvements in food security were related to improvements in livestock health, directly attributed to the project feed banks, and to some extent the project wells. It would appear that at the time of the assessment the actual food benefits being derived would be in the form of milk transfers to the household. Having said this, the findings suggest that potential income from the sale of livestock and livestock products represents a kind of food security currency which can be converted into food if and when it's needed.

The primary objective of the projects re-stocking exercise was to improve household nutritional status, through milk and meat transfers. Although the assessment did not measure changes in nutrition, it would be fair to assume that the increased milk consumption and other food security benefits mentioned by participants, would have had a positive impact on the nutritional status of both the re-stocking recipients, and feed bank clients.

It would appear that most of the income and savings benefits from the project have not been realized, as they are currently invested (tied up) in livestock assets. Nevertheless project participants claimed that they now had more disposable income as a result of the project. This income would have come from the sale of milk and livestock, but more importantly it would have come in the form of savings on milk, livestock and livestock feed. This income and savings has played a part in reducing people's dependency on income earned through migrant labor, and enabled them to invest in livestock assets. It's anticipated that these investments in turn will continue to enhance livestock production. The assessment did not estimate the potential income tied up in livestock assets derived directly from the project. However, it was estimated that the offspring of the habbanaye sheep alone might potentially fetch an average of between fifty to a hundred US dollars for each participating household, depending on what time of year they are sold<sup>14</sup>.

The primary objective of the feed banks was to 'decrease market vulnerability by increasing pastoralist terms of trade in order to increase year round access to food and feed'<sup>ii</sup>. Improvements in livestock health attributed to the feed banks have also helped to increase people's resilience to drought and other shocks. Not only will healthier livestock be less susceptible to the impact of drought and livestock disease, they will also to some extent retain their market value, through supplementary feeding from the project feed

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<sup>14</sup> Using an exchange rate of 1 USD to 450 CFA

banks. In this respect the project has helped to strengthen pastoralist terms of trade thus improving their resiliency to both drought and market shocks.

The increase in livestock assets attributed to the project has also helped to improve people's resiliency. Livestock assets are essentially seen as insurance against a drought or food shortage, at which point they can be exchanged (or sold) for cereals. The accumulated stock from the habbanaye exercise alone represents a conservative forty days of cereal provisioning for each participating household.

The findings do indicate that the project has had an impact on household food security, income and resiliency to drought, and that all three are closely linked. What's deceptive is that most of the food and income benefits from the project have yet to be realized. At the time of the assessment most of the potential food and income benefits from the project were tied up in livestock assets. That most of these livestock had not been converted into income or food is in itself, an indicator of both short and longer term food and financial security. The immediate impact of the project is therefore best understood in terms of the animal health benefits attributed to the feed banks and wells. The longer term impact of the project can only really be estimated in the potential food, income and drought resiliency benefits that will materialize over time, as a result of the stated improvements in animal health.

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## Endnotes

<sup>i</sup> Bill & Melinda Gates Foundation (2005) Request for Proposals; Number GHS-05-01. Sub-Saharan Africa Famine Relief Effort "Close to the Brink, September 2005

<sup>ii</sup> Bill & Melinda Gates Foundation. (2005) Request for Proposals; Number GHS-05-01. Sub-Saharan Africa Famine Relief Effort "Close to the Brink, September 2005

<sup>iii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>iv</sup> FIC, Tufts (2006) Feinstein International Center, Tufts University Mid Term Visit to LWR Project in Niger. A Report Submitted to the Bill & Melinda Gates Foundation December 2006.

<sup>v</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>vi</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>vii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>viii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>ix</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>x</sup> Catley, A (1999) The Herd Instinct, Children and Livestock in the Horn of Africa. Working Paper 21 Save the Children, London.

<sup>xi</sup> Catley, A (1999) The Herd Instinct, Children and Livestock in the Horn of Africa. Working Paper 21 Save the Children, London.

<sup>xii</sup> Catley, A (1999) The Herd Instinct, Children and Livestock in the Horn of Africa. Working Paper 21 Save the Children, London.

<sup>xiii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xiv</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xv</sup> Catley, A (1999) The Herd Instinct, Children and Livestock in the Horn of Africa. Working Paper 21 Save the Children, London.

<sup>xvi</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xvii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xviii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xix</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xx</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xxi</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xxii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xxiii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xxiv</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

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<sup>xxv</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>xxvi</sup> Cekan, J and Hlaibi, AJ. (2006) Pastoralist Survival and Recovery Program (ARVIP) Baseline Survey

<sup>xxvii</sup> Cekan, J and Hlaibi, AJ. (2006) Pastoralist Survival and Recovery Program (ARVIP) Baseline Survey

<sup>xxviii</sup> FIC, Tufts (2006) Feinstein International Center, Tufts University Mid Term Visit to LWR Project in Niger. A Report Submitted to the Bill & Melinda Gates Foundation December 2006.

<sup>i</sup> FIC, Tufts (2006) Feinstein International Center, Tufts University Mid Term Visit to LWR Project in Niger. A Report Submitted to the Bill & Melinda Gates Foundation December 2006.

<sup>i</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

<sup>ii</sup> Lutheran World Relief. (2005) Pastoralist Survival and Recovery Program, a Proposal to the Bill and Melinda Gates Foundation, October 2005.

## Annexes

### Annex 1: Impact Assessment Team

Abdelah Ben Mabrouk	LWR (ARVIP) Project Coordinator
Ahmed Jacquue Hlaibi	LWR Consultant
Omar Abdon	CEB enumerator
Hawada Argalass	CEB enumerator
Assoumane Chai	CEB enumerator
Alexa Reynolds	Feinstein Center, Research Assistant
Omeno Suji	Feinstein Center, Consultant



Assessment Team Members outside the CEB office in Dakoro

Annex 2: Notes on Livestock/Cereal Conversions

Estimates <sup>ii</sup>	Comments/assumptions
902 (sheep)	Estimated number of offspring 902 assumes a 10% mortality rate on 1102 offspring born (see table 3.2 for estimates on mortality)
18,750 (CFA)	Average price of an adult ram (see table 3.3)
200 (CFA)	Average price 1 kg millet (converted using estimates from table 3.3)
605 (HH)	Number of households that received sheep
3,630 (people)	Total number of people in the 605 recipient households (assumes 6 people per household – from baseline report)
6,150 (people)	Total population of the 10 communities (from baseline report)
500 grams	Estimated daily cereal requirement per person

Other assumptions

1 tia = (exactly) 2.5 kg

Adult ram is used as a valid unit of conversion

$(902 * 18,750 / 200 * 1000 / 500 / 3630 = 46.6 \text{ days cereal supply})$

### Annex 3: Notes by community:

#### Bargass

1. “Tontine”: women used the management teams created for habbanaye fund to organize own savings fund in Bargass, each contributes 250 CFA/week and funds are given out according to schedule which rotates through contributors – 1 weekly (so increasing amount given out weekly as fund grows)
2. Wanted to use habbanaye fund for microcredit, but weren’t allowed, was needed to replace or heal sheep
3. Men concerned that only women got animals, in case of divorce, women will leave with animals
4. Remittances from family in Nigeria, but only when in dire need
5. Costs of first grandchild are significant part of spending by women
6. Costs of gifts when your son gets married are significant part of spending by women
7. Cost of valise for your daughter for when gets married are significant part of spending by women
8. Habbanaye animals provided 2 extra months of food security
9. Had to combine some proportional piling cards
10. More millet per day leads to greater strength and better work in the fields, which leads to improved harvests

#### Fadama Rakouma

1. Changes noted in food sources were principally that no more food aid came/was required, and that food from the bush was not used)
2. Habbanaye has increased food security. Before, they had no animals. Now, they have the offspring from the habbanaye which allows them to purchase their daily supplies.
3. Due to better rains and other non-project factors, fields have produced higher yields, leading to increased food security
4. In this community, only Touareg women make and sell mats
5. Reasons noted for changes to income included:
6. Increase in sale of agricultural products
7. More rain

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8. In herding communities, poverty results from having nothing to sell, so no ability to purchase goods they don't produce. In this situation, herders are forced to sell off their animals in order to survive (they will not eat their own animals, selling them is the only choice) and once money from the sale of animals is spent, they have to leave the community to find work elsewhere
  9. Reasons for changes in expenses:
  10. Through the distribution of the habbanaye animals, and due to increased amounts of rain, families now have enough to buy their daily supplies (provisions) and to invest in new animals.
  11. Daily supplies and purchase of livestock are the only priorities here. Spending on health and ceremonies are of less importance.

Marafa (2 nights):

1. Community has adopted the strategy of buying all the feed for the feedbank in low price periods for sale during high price periods at low prices
2. Mentioned the problem of the habbanaye system of rotating adult sheep away from their offspring too early
3. This community received a new well at a cost of 2 million CFA
4. Some time saved by using new well because water spilled during collection runs into feeding troughs for the animals, so they don't need to carry the water by hand to the troughs
5. The new well has split the wait time for water in half. Before the construction of the new well, the old well was in use all day and night every day, and women were only able to collect water if the men working the well were willing to help them
6. The amount of time it used to take to get water meant that women would return late from the well, and wouldn't be able to get dinner ready until after their children had fallen asleep, and they would have to wake their children up in order to feed them
7. Now they get back early enough from the well to prepare a meal and feed their children at a reasonable time
8. Another change noted was that every day, households eat 2 meals. While the meals may not be sufficient, there are always 2 of them.
9. In larger households, male heads of households don't generally provide the women with as much millet as they need to feed the family. This is part of the way the men manage ongoing food limitations
10. Now that they have more animals, and through the course of the project, the community members have begun giving the water they used to rinse their millet-pounding tools to their

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animals. Previously, this vitamin-rich rinse water was given to the donkeys – animals with very little social value, which was roughly considered to be throwing the water away

11. Some people here really thought that they would never be able to own animals. Now the whole community feels rich
12. The project has provided this community with a better understanding of the outside world. One person commented that until the project, they used to run and hide when they heard a vehicle approaching
13. Community requested literacy training, and this was provided for one year. They would like the literacy training to continue
14. The community would like a school to be constructed in Marafa, so that their children don't have to walk the 2km to the nearest school

#### Koundoumi:

1. Improved animal-raising practices
2. Built their own animal feedbank, with feed and a door provided by CEB
3. Women in this community spend a large portion of their budget on traditional ceremonies as investment in a ceremony can mean improved relations within their own families, with other families, and with new members of the family (new wives) – all of which can lead to better social status and greater support (social/financial etc)
4. People in this community rarely leave to work elsewhere or for education. People born in the community stay there, and as result, they receive very little in remittances from outside
5. Food Aid during the drought was provided by Oxfam

#### Other notes:

1. Some communities asked for donkey carts for transportation
2. Communities who did not receive feedbanks noted that they would be very helpful
3. In some communities, women keep and then sell a portion of the millet they are given each day by the head of the household in order to purchase other necessities
4. All of the communities with animal feedbanks will send their feedbank committee representatives to Dakoro to negotiate the price of feed for all of the feedbanks with one supplier

#### Issues around end of project:

1. Fear by communities of outside authorities. Community members consistently explained that if someone from outside came in the name of the project and requested that they round up all of the animals and give them to them, that they would comply and return all the animals.

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2. Even was it was re-explained to them that those animals belong to them and cannot be taken away, there was great uncertainty about how they would end the project if they no direction was given to them
  3. Discussion on the idea of them determining how to end the project themselves led to the issue of previous decisions made by some habbanaye committees having been unfair. Some said that if the committee made the decision and asked them to do something they didn't want to do (like give sheep to someone else), they would refuse to accept the decision
  4. One man mentioned that the committee had made his wife give up her habbanaye sheep to soon after the sheep gave birth, and as a result, the offspring died
  5. Abdellah's idea at this point was that the project team and LWR Niger should either go to the villages and settle the end of the project with each one, or have representatives come to Dakoro and settle with everyone at once, so that the decision will be official, known by all, and impossible to ignore or claim that they did not understand or hear about the decision.
  6. His idea for the actual plan to end the project was that whoever has the habbanaye sheep now should keep them. Those who received them in the last round (round 3) should be the last of the needy. Sheep were distributed to women in the order of greatest need. Those who received sheep first were neediest, those who received them more recently were less needy. There is no need for a fourth round because anyone who has not yet received sheep shouldn't really have had that great a need.
  7. The risk in not closing things officially and in front of everyone, is that someone from CEB (or more likely someone claiming to be from CEB) could come back and take all the animals – it has happened with other projects
  8. The other concern with not ending things officially is that it could leave a great source of division and tension in the communities over who benefited, who didn't, what should or should not have happened, who is in control, and who has to submit to that control
  9. Another option would be to sell all of the adult animals, and put the fund generated in the bank to serve as a credit source

#### Annex 4: Community Recommendations for ARVIP Project Sustainability

Adpated from the ARVIP Project Sustainability and Exit Strategy by Jacques Ahmed Hlaibi and Ben Mobrouk Abdelah

Before conducting the final evaluation, LWR, partner staff and an LWR consultant facilitated a final forum dedicated to the issue of project sustainability. Working groups consisting of about 40 community representatives from 11 communities both identified the strengths and weaknesses of each project objective and determined their recommendations for the initiative's sustainability by project objective.

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Later in plenary, there was a fruitful debate during which working group recommendations were synthesized among the larger group of community representatives. These recommendations are detailed here.

#### Habbanaye

For each project activity, proposals for achieving sustainability were provided by each group. The habbanaye participants decided to:

1. Make one last rotation for those beneficiaries who were identified but still waiting (1-2 ewes). If animals remain, grant them to the recipients who lost their animals. If additional animals still remain, make an equitable redistribution between the recipients, with a priority for the most vulnerable.
2. Convert the guarantee funds into a small credit fund to allow the women to initiate income generating activities.
3. Formalize the 6 other committees with the support of partner, CEB to solidify the structures of management. CEB would provide one session on community life and good local governance to ensure their sustainability.
4. Seek additional supports to purchase more animals for women – reinforcing their assets and guaranteeing a better reconstitution of the livestock.

#### Feedbanks

To ensure feedbank sustainability, participants recommended the following:

1. formalizing the 4 other boards of managements;
2. choosing cotton seeds, if the price of wheat is not favorable. When the price is favorable, part of the funds would be used to meet the pressing needs in order to avoid possible price-cutting;
3. organizing periodic meetings to:
4. identify the needs and the methods of provisioning and sale, and
5. present the balance sheet at the end of the season and the learned lessons;
6. carrying out bulk orders in order to be able to directly negotiate with the suppliers;
7. recycling the boards of management;
8. maintaining and consolidating the follow-up and the periodic support/council provided by CEB;
9. reinforcing current stocks of the livestock feedbanks to effectively respond to the needs and requests of the communities; and
10. seeking support to equip the 4 other communities with livestock feedbanks.

## Wells

In order to ensure improved well management, the participants agreed to:

1. elaborate and/or bring up to date the management rules specific to each community;
2. establish a precise watering calendar to avoid obstructions around the wells;
3. ensure good well maintenance through cleansing and take care of cleanliness around the wells
4. sensitize users on the rules of management;
5. regularly hold discussion and decision-making meetings;
6. establish annual financial balance sheets representing contributions and expenditures.

The project has formally ended and there has not been an agreement for an ex- post evaluation to assess how well the community and the partner follow through on these recommendations for the projects' sustainability. However, this final forum was critical for 1) the comprehensive dialogue it engendered and 2) for making concrete and specific proposals. These outcomes are critical for the implementation of the agreed follow-on actions to take place.