



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

Impact Assessment of the Zimbabwe Dams and Gardens Project

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Impact Assessment of Innovative Humanitarian projects in Sub-Saharan Africa
The Feinstein International Center in partnership with the Bill and Melinda Gates Foundation and
CARE International



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A Focus Group Discussion with project participants at Njenge Dam

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Acronyms and Abbreviations used in the Report

AREX	Government Agricultural Extension Officers
DFID	Department for International Development (UK)
FGD	Focus Group Discussion
FIC, Tufts	Feinstein International Center, Tufts University
HH	Household
HHI	Household Interview
IGA	Income Generating Activity
IMF	International Monetary Fund
M&E	Monitoring and Evaluation
PIA	Participatory Impact Assessment
RFP	Request for Proposals
SDCRM	Small Dams and Community Resource Management Programme
SPSS	Statistics Package for Social Sciences
SWOT	Strengths Weaknesses Opportunities Threats
WFP	United Nations World Food Programme
ZDG	Zimbabwe Dams and Gardens (Project)
ZIMVAC	Zimbabwe Vulnerability Assessment Committee
ZWD	Zimbabwean Dollar

Summary

This study was an impact assessment of the ‘Zimbabwe Dams and Gardens’ Project’ a community based famine prevention and mitigation intervention being implemented by CARE International in Masvingo Province, Zimbabwe. 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 ‘Zimbabwe Dams and Gardens Project’ was designed to prevent and alleviate famine in two drought-prone districts of Masvingo Province. The key project components included the rehabilitation of community dams, the establishment of community gardens irrigated by the dams, the formation of savings and loan groups, and the provision of training in crop management and conservation farming. The assessment focused on measuring the impact of the dam and garden component of the project at Zipwa, one of the three communities being assisted under the initiative.

The impact assessment focused on the direct impact on the food security status, income and livelihoods of the project participants, it did not attempt to unravel the social, political or environmental impacts that might be associated with a humanitarian intervention. The assessment was carried out by CARE project staff and Government Agricultural Extension (AREX) officers affiliated with the project, and supported by researchers from the Feinstein Center. The assessment took place only six months after the project participants had started producing crops from the community garden at Zipwa. The completion of the dam and installation of the irrigation system only occurred five months before the assessment took place. Given this timeframe it was expected that the project would only have had a limited impact on the livelihoods of the participating households by the time the assessment was carried out in August 2007. To some extent the findings of the assessment confirmed this expectation, yet the results do indicate that the project has already had a significant impact on household food security, thus meeting the primary goals and objectives of the project.

Furthermore the assessment took place within a context of hyper-inflation, and shortly after a failed cereal harvest. It also coincided with wide spread food shortages in the country brought about by government imposed price controls. These multiple shocks no doubt diluted the measurable impact of the project in terms of direct livelihoods benefits. Having said this, the findings suggest that the project has helped people cope with the effects of drought and inflation.

The project has contributed to a significant improvement in household food security amongst the project participants by providing them with a new source of food, a steady supply of food, and nutritionally more diverse types of food. There has also been a significant reduction in the importance of food aid to the household food basket since the project started. The sale of crops from the project garden has provided people with a new source of income, and the findings suggest that a good portion of this income is spent on food.

The project has had a noticeable impact on the income of the participating households. The new source of income provided by the project garden has compensated for this year's loss of income from cereal crop sales. In this respect the project has also met its goal of alleviating or mitigating the effects of the ongoing drought. The results also show changes in the relative importance of different income sources, with the project garden being scored as the most important source of income for project participants this year. This income has enabled people to cover priority expenses such as household food purchases and school fees.

Other important benefits include the considerable time savings on water collection for vegetable irrigation and domestic use. Part of this time saved is now being allocated towards food production. Secondary data from the other communities being assisted by the project points to similar benefits as those found at Zipwa although the timing and relative importance of the different project impacts appears to differ across the three communities.

As mentioned the assessment took place well before the project could be expected to have had a major impact on the livelihoods of the participants. Nevertheless even the immediate impact has been fairly dramatic particularly in terms of the food security benefits derived from the project. Although the income benefits were less evident, it would be reasonable to expect these to become more pronounced over time. If so it could be expected that this would manifest itself in changing expenditure patterns amongst the participating households.

1. INTRODUCTION

1.1 Sub Saharan Africa Famine Relief Effort

The Sub Saharan Africa Famine Relief Effort “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 Foundation’ put out a Request for Proposals (RFP) 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’ⁱ. 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”ⁱⁱ.

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.

On the basis of this RFP process, project grants were awarded to seven projects (including the ZDG 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.

1.2 Impact Assessment of Innovative Humanitarian Projects in Sub-Saharan Africa

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 four selected projects¹. The goal 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:

1. To develop an impact assessment approach and methodology with the organizations implementing the Sub-Saharan Africa Famine relief projects.
2. To apply this methodology to selected agency projects to produce a comprehensive impact evaluation report.

In order to meet the goal 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 with 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.

¹ 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.

2. Feinstein Center researchers carried out ‘mid term’ visits to six of the seven projects². The primary objective of these visits was to work in partnership with the client communities to identify their own indicators of project impact. Depending on the timing of the visits within the overall project timeframe, the visits did include other activities. 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 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 will carry out a final impact assessment of their projects. The Feinstein Center has selected to support a comprehensive impact assessment of four of these projects. This report is the outcome of the second of these assessments.

1.3 Zimbabwe Dams and Gardens Project

1.3.1 Project Background

Under the Sub-Saharan Africa Famine Relief Effort CARE International, Zimbabwe has been implementing a food security livelihoods support project aiming to assist drought affected communities in Masvingo Province. The project was designed “To alleviate and prevent famine in a drought-prone region of Zimbabwe, through an integrated community-based approach including repairing dams, establishing irrigated gardens, forming savings and loan groups, training farmers in crop management, and providing in-kind food assistanceⁱⁱⁱ”. The project is modeled on “CARE’s Small Dams and Community Resources Management Programme” (SDCRM)^{iv}. The overall project goal is to “improve access to food both quantity and quality, including food that is produced, grown, or bought, by vulnerable households in specific drought-prone regions of Zimbabwe, in both the short term and long term^v”.

Table 1.1 Specific project objectives

Objective 1	To meet the acute short-term food needs for vulnerable groups
Objective 2	To extend the capacity of vulnerable farming households to grow and consume a wider variety of crops over a longer period of each growing season
Objective 3	To assist dam communities to maximize the potential of crop management practices that will significantly increase production in both gardening (irrigated) and rain-fed agriculture
Objective 4	To help vulnerable households invest in activities to produce food for consumption or sale, or to generate income that can be used for the purchase of food, either regularly or in emergencies

The main hardware component of the project involved the rehabilitation of three dams at Zipwa, Chehemba and Njenge. The dam at Zipwa was first built by the government in the 1950s and it has been damaged and rehabilitated several times since. Construction on the dams at Njenge and Chehemba started in 1997 and 1991 respectively with support from Lutheran Development Services (LDS). For various

² One of these mid term visits had to be cancelled at the last minute due to security considerations at the project site. The FIC researcher met with the project team in a neighboring country. As a result many of the objectives of the mid term visit were not met.

reasons when the RFP for the Sub-Saharan Africa Famine Relief Program was launched in 2005, neither of these dams had been completed. The project aimed to complete or rehabilitate these three dams. Project participants from the three communities were to provide the required labor and provide local materials for the construction activities³.

The second key component of the project involved the establishment or extension of existing community ‘nutrition’ gardens adjacent to the dams, which would provide gravity fed irrigation for the gardens. One hundred and seventeen households are participating in the project garden component at Zipwa, one hundred and fifty at Chehemba and seventy five at Njenge. Aside from the irrigation equipment and fencing materials, CARE has provided training and agricultural inputs to promote the introduction of new crop varieties and improve production.

The third main component of the project focused on the establishment of community based savings and lending groups. A key assumption being that the income to support these groups would be derived from surplus crop sales from the project garden. (*See annex 2 for a description of how these savings groups function*).

The project also provided food assistance to 4116 individuals within the three dam communities. This was done in partnership with the World Food Programme (WFP). In addition to this fifty farmers from the community at Zipwa were trained in conservation farming. (*See annex 3*)



Zipwa Dam during and after reconstruction

³ Without any financial remuneration

1.3.2 Status of Project Implementation at the time of the Assessment

The RFP for the Sub-Saharan Africa Famine Relief Effort was launched in September 2005 and the selection and approval of projects took place in October. Construction on the dam rehabilitation works therefore only started well into the 2005/2006 agricultural planting season. The construction of the dam at Zipwa experienced some setbacks, partly due to problems with the original contractor, and more significantly when the dam wall was undercut as a result of severe rains in late 2006⁴. Nevertheless the community garden and savings groups at Zipwa had already been established by the time of the FIC mid term visit in February 2007. Although the community garden participants were still using bucket irrigation from the incomplete dam at this point in time, they were already benefiting from the sale and consumption of crops from the garden.

During the same period (*Feb, 2007*) the construction works of the dams at Chehembra and Njenge had been completed and the installation of the irrigation pipes and reservoirs was being finalized. However, the two project gardens were still being established and extended, and the savings groups had not been officially formed.

Aside from the construction delays at Zipwa the project faced a number of other challenges during implementation, most notably those pertaining to inflation and price increases of fuel and building materials. Annual inflation in Zimbabwe is the highest in the world and has been estimated at 25,000 percent; the International Monetary Fund (IMF) predicts it could reach 100,000 percent by the end of 2007^{vi}. International organizations operating in Zimbabwe are expected to purchase local currency at the official exchange rate. In real purchasing terms this policy effectively reduced the project budget to a third of its original value by the middle of 2006⁵.

In response to these challenges CARE, had to modify the project, and as a result some of the objectives outlined in the original proposal could not be met, nor did they conform to the model developed by CARE under the SDCRM Programme. CARE requested a cost sharing arrangement with DFID and the French Embassy on the dam construction at Zipwa, and a no cost extension to the overall project. Both requests were approved by the Gates Foundation.

The final impact assessment started in August 2007, and at this time all the major construction works had been completed, the irrigation systems were in operation, all three gardens had been established as well as a number of saving and lending groups.

⁴ The area received 105 ml rain in less than 4 hours.

⁵ 'Up until 2003 with a budget of \$ US 500,000 CARE could have expected to rehabilitate eighteen dams, by August 2006 they might only manage five as each dam would cost \$ US 100,000' –verbal dialogue with CARE project personnel, Harare, August, 2006.



The community garden in Chehemba in February and July 2007

2 ASSESSMENT METHODOLOGY

2.1 Study Design

For the purpose of this study the following definition of impact was used; ‘those benefits and changes to people’s livelihoods, as defined by the project participants, and brought about as a direct result of the project’.

Within the framework of this definition the assessment set out to measure impact against the food security objectives of the project, and against a number of community defined impact indicators. The community impact indicators were identified by project participants during a Feinstein Center field visit to the project in February 2007. These indicators were collected during focus group discussions at which participants were asked to define their expectations of the project in terms of livelihoods benefits. The most frequently mentioned expectations and benefits were then validated by asking the participants whether these would be useful impact indicators of project impact. The participants were also asked at what point in time they expected to realize these project benefits and expectations. Essentially the indicators collected during the visit corresponded with the indicators collected by CARE during the baseline survey. These indicators were then used to develop a set of participatory tools to measure the impact of the project.

Although there were several components to the project the impact assessment was designed to focus largely on the impact of the community garden. The main component of the assessment involved individual household interviews with project participants. The objective of these interviews was to capture perceptions of impact at the household level. The second component involved focus group discussions with both project and non-project participants. The objective of these discussions was to capture perceptions of impact at the community level, and to triangulate the data from the individual interviews.

2.2 Research Questions

The impact assessment was formulated around the following research questions:

1. What impact has the project had on the food security status of the participating households?
2. What income benefits has the project provided to the participating households?
3. What impact has the project had on the livelihoods of the assisted communities?

2.3 Study Areas

The assessment was carried out at Zipwa dam in Chivi District. Secondary data collection was carried out at Chehemba and Njenge dams in Mwenezi District.

2.4 Sampling

2.4.1 Study Locations

The geographical sampling for the focus group discussions was stratified to cover all three communities participating in the project. The geographical sampling for the household component was purposively restricted to six villages: Mhikuro, Mupfacha, Chiwokoyo, Jacha, Jongwe and Muchacha served by Zipwa dam. The villages are located in wards 10, 14, and 15 of Chivi District (*see community map annex 4*). The assessment team spent eight days in Zipwa, one day in Chehemba, and one day in Njenge. Focus group discussions were held next to the community gardens at all three sites. Individual interviews were held either at the project garden in Zipwa, or at the actual households of the project participants. A feedback session was also held at the community garden in Zipwa a week after the assessment ended.

2.4.2 Method and Size

The sampling frame for the household component of the assessment was the one hundred and seventeen registered households participating in the project activities in Zipwa. Sixty four households (54%) participated in this component of the assessment. Participants were selected using purposive sampling, but this was stratified to include thirty sentinel households selected by CARE for project monitoring activities, and thirty four non-sentinel households. The sentinel households were drawn from three wealth categories (poorest, poor, and average) defined by the community during the M& E baseline survey. The wealth categories were based on indicators such as the number and type of livestock owned, ox carts (scotch carts) and ox-plows. All the respondents including the non-sentinel households were registered project participants.

For the focus group discussions, pre-arranged meetings were organized with the community at the three dam sites. Four focus group discussions were held, two of these at Zipwa, and one each at Chehemba and Njenge. The focus group discussions included representatives from all three wealth categories, and both male and female respondents, although most participants were female.

Table 2.1 Sampling for the impact assessment at Zipwa dam

Project Component	Male	Female	Total # HHs,
Household Interviews	13	51	64
Focus Group Discussion 1	2	23	25
Focus Group Discussion 2	15	35	50

2.5 Data Collection Methods

The main component of the impact assessment was individual household interviews (HHI) and the primary data collection tool used was a semi structured interview. These interviews were structured around a standardized set of exercises using a number of participatory methods, including. ‘Before’ and ‘After’ scoring, impact scoring, and proportional piling. These tools were used to capture perceptions of change in household food and income sources, and household food utilization. After each scoring exercise respondents were asked to explain (attribute) any changes that had been observed.

Focus Group Discussions (FGD) were held at the community level. These discussions included several participatory exercises. The first of these was a SWOT analysis which looked at the Strengths, Weaknesses, Opportunities and Threats associated with the project. Comparative scoring exercises of project activities and project benefits were also done during these discussions. Community maps and timelines were developed with the focus group participants in order to define the projects spatial and temporal boundaries.

Secondary data and community impact indicators came from semi structured interviews, key informant interviews, focus group discussions and individual case studies collected during field visits.

Table 2.2 Summary of methods used

Method	Use/Issue	Sample
Impact scoring	To determine the relative importance of different project benefits at the household level	64 HH
Before and after Scoring	To measure:	64 HH
	• relative changes in the importance of food sources within the household food basket	64 HH
	• relative changes in food sources	64 HH
	• relative changes in income sources	27 HH
Before and After scoring against a nominal baseline	To measure relative changes in:	64 HH
	• the volume of the household food basket	64 HH
	• household Income	64 HH
Focus group discussions	To :	2 FGD
	• collect qualitative community level perceptions of project impact	2 FGD
	• triangulate data from household interviews	2 FGD
	• collect data on the strengths, weaknesses, opportunities and threats	2 FGD
	• to develop community maps	2 FGD
• to develop community timelines	2 FGD	
Semi structured interviews	Used:	64 HH
	• to estimate time saved on water collection as a result of the project activities	64 HH
	• to identify new foods being consumed in the household as a result of the project	64 HH

The sample represented in this table is specific only to those methods used at Zipwa during the final impact assessment.

2.6 Pre-Testing

Field testing of the data collection tools was done in July 2007, two weeks before the final assessment started. This exercise was used to fine tune the tools and indicators that had been developed. The exercise took place in the project communities, and at a control site Nyimai where a similar project had been implemented by CARE in 2001. The assessment team had originally planned to include Nyimai as a control site in the assessment with the objective of demonstrating the potential longer term impact that might be expected from this type of project. However the project time-frame for Nyimai was five years as opposed to eighteen months for this project, it would have therefore been difficult to justify any comparison with Nyimai.

2.7 Triangulation

Various types of secondary data was used to cross-check the results of the assessment. These included the baseline survey and project Monitoring and Evaluation (M&E) records and progress reports. M&E data was used to match project service delivery and inputs with the changes (impact) captured during the assessment.

Other resource documents that were used for triangulation were the ZIMVAC food security and vulnerability reports for 2004 and 2005, the Zimbabwe Livelihoods Profiles, 2005, and the CARE household livelihoods survey 2006.

Focus group discussions were used to cross check the data collected during the household interviews. This was done by collecting more qualitative data on project impact, and comparing the perceptions of the FGD participants with the more quantitative perceptions captured in the household interviews.

The results of the assessment were shared with the project participants at Zipwa community garden at the end of the assessment. This exercise was used to validate the findings and get feedback on the results from the participants.

2.8 Data Analysis

With the exception of the frequency tables all the quantitative data from the household interviews 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 same was done for the proportional piling exercise on food basket contributions and the scoring exercise on food utilization. For the impact scoring exercises on project benefits the mean score was calculated using Microsoft Excel.

3. RESULTS

3.1 Timing of the Intervention

Figure 3.1 Timeline of events at Zipwa

Year	History of the Dam and Garden (partly adapted from the CARE baseline report)	Other important events
1951	Dam first constructed by the government using forced labor	
1990s	30 m long concrete embankment built as a spillway on the left bank of the dam	
2000	Dam breached as a result of flooding caused by Cyclone Eileen	
2004	CARE began dam rehabilitation but construction work stopped due to problems with the contractor	<ul style="list-style-type: none"> • Anthrax outbreak • Gold panning for survival • Food aid and seed inputs from CARE
2005	Rehabilitation work resumed under a new contractor but was not completed before the onset of the rains. The excavations filled up with sediment.	<ul style="list-style-type: none"> • Good rainfall but shortage of draft animals due to anthrax • Food aid from CARE • Senate elections • Operation Murambatsvina
2006	<p>Dam rehabilitation resumed under a new contractor in September with funding from the GATES foundation. The community garden is marked out and fenced. Seeds are distributed by CARE.</p> <p>In November construction of the spillway was almost complete when the dam wall was breached and undercut by flooding (The area received 102mm of rain in 3 hours, normal rainfall is 511mm/year). Production activities started on the garden using bucket irrigation from the damaged dam.</p>	<ul style="list-style-type: none"> • Earth tremors • Good rainfall • Food aid from Dachicare and the Red Cross • Government provides seed assistance • Operation Chikorokoza • Operation Maguta
2007	<p>Dam rehabilitation completed and irrigation system installed</p> <p>FIC, Tufts project visit in February Participatory Impact Assessment in July/August</p>	<ul style="list-style-type: none"> • 2 months food aid from CARE • Drought (failed maize harvest) • Price controls • Food shortages • Voter registration

3.2 Impact Indicators

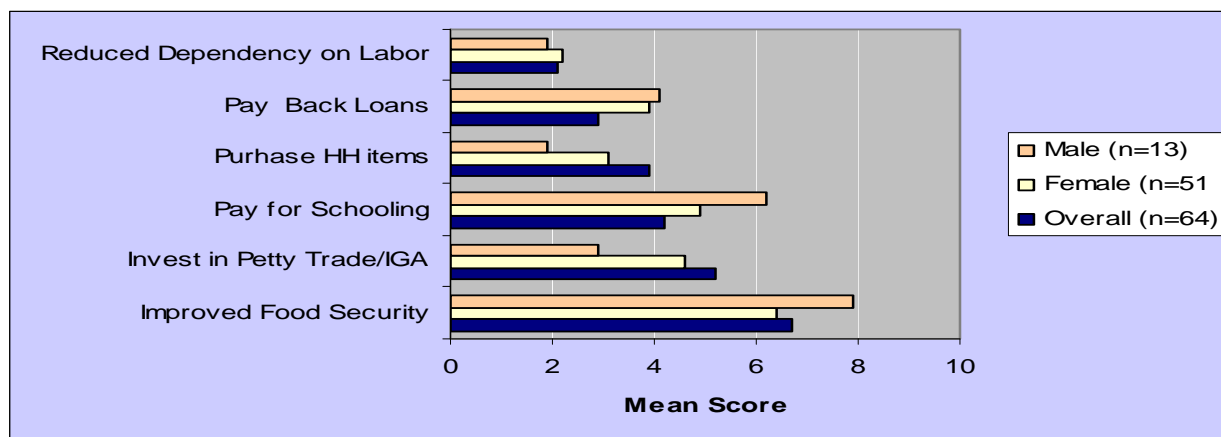
The following indicators of project impact were identified in partnership with project participants during the field visit in February 2007. These include benefits derived from the dam, the project gardens, and the savings groups.

Table 3.1 Community defined impact indicators

Expected project impact/benefits
Improved nutrition and household food security
Income to pay for school fees, uniforms and text books
Income to purchase foods such as tea, sugar, and <i>sadza</i> (maize flour)
Income to buy household items (cooking utensils, blankets, soap)
Income to buy livestock and poultry
Income to buy clothes and shoes
Income to purchase seeds and farming implements
Income to join a savings group
Income to pay for medical expenses (better health care)
Income for veterinary drugs (improved animal health)
Home improvements
Access to water for irrigation
Water for domestic use and consumption
Access to water for livestock (consumption and dip tanks)
Access to water for bathing
Access to water for brick moulding (for home construction and sale)
Increase in the availability of fish for consumption and sale
Access to reeds for thatching, making mats (for sale) and ant harvesting (the ants are consumed)

3.3 Project Benefits

Figure 3.2 Relative mean score of project benefits



Data derived using impact scoring with 25 counters.

Notes on Figure 3.2:

IGA = Income Generating Activity: (see annex 2)

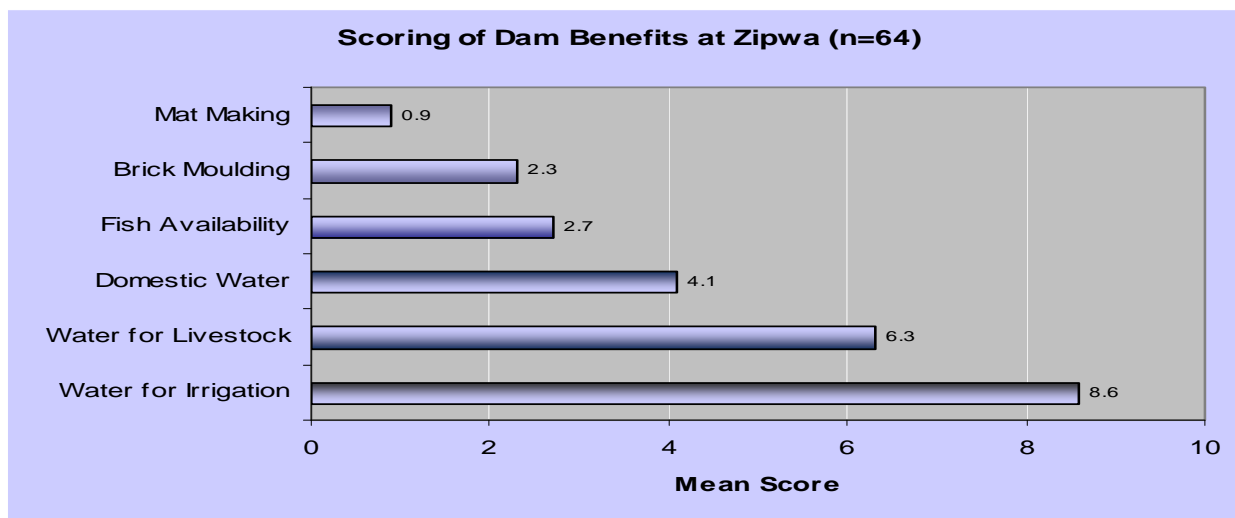
HH items = Household items which includes, cooking utensils, blankets, soap, shoes and clothes

Schooling = School fees, school uniforms, books and stationary

The indicators along the y axis were collected from project participants during field visits. Note there may be some overlap in these general categories. For example the ability to pay back a loan may be equated with the ability to join a saving and lending group, which in turn may enable that person to expand on petty trade activities or start an IGA

3.3.1 Dam Benefits

Figure 3.3 Relative importance of the benefits derived from the Dam at Zipwa



Data derived from impact scoring with 25 counters

Notes on figure 3.3:

The indicators along the y axis were collected during the mid term field visit.

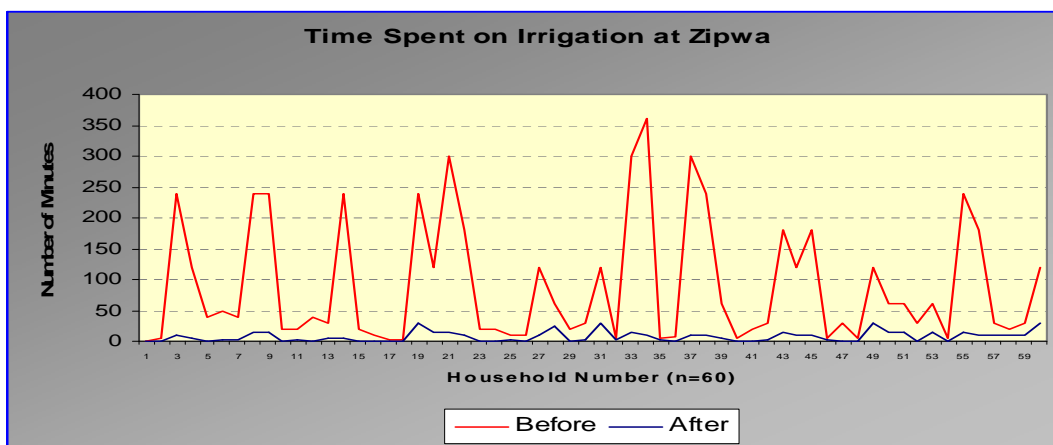
Mat making refers to an increase in the availability of reeds which are used to make mats. These are then sold representing an income benefit

Brick moulding refers to an increase in the availability of water for brick making. The bricks are sold and used for home construction representing similar income, employment, and home improvement benefits as mats.

3.3.2 Time Savings Benefits

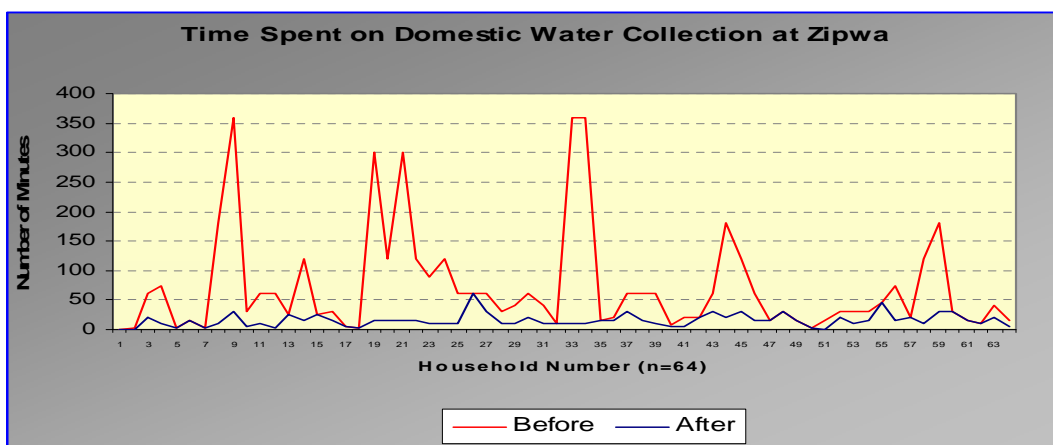
Since the dam has been rebuilt, the average daily saving on water collection per household assessed is approximately two hours and nineteen minutes. Most of this time has been saved on irrigation. Before the project each day households spent an average of ninety minutes collecting water for irrigation as opposed to just over seven minutes after the project. The same households spent on average of seventy two minutes before the project collecting water for domestic use as opposed to fifteen minutes after the project. Figures 3.4 and 3.5 give a visual representation of the time saved per household.

Figure 3.4 Time savings on irrigation at Zipwa (n=60)



Data derived from individual household interviews

Figure 3.5 Time savings on domestic water collection at Zipwa (n=64)



Data derived from individual household interviews

Notes on figures 3.4 and 3.5: Four of the respondents did not irrigate garden plots before the dam was completed. The other sixty were either cultivating homestead gardens or since May 2007 cultivating plots in the project garden using bucket irrigation.

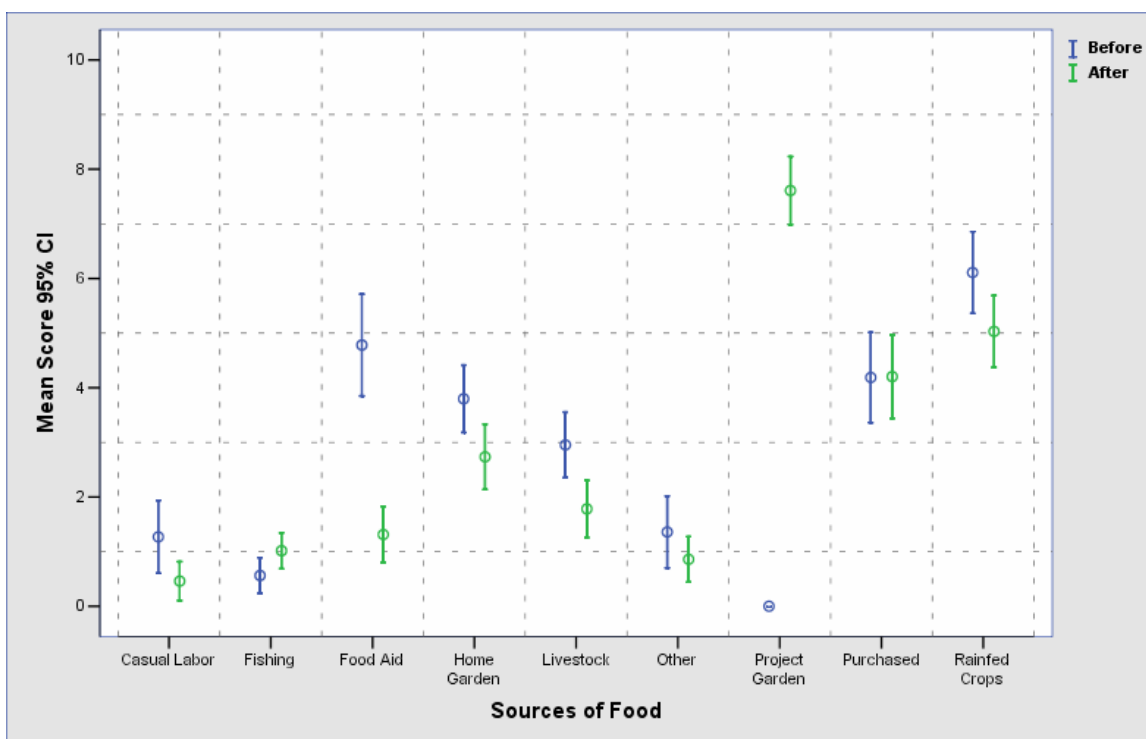
Comment: Water collection is primarily done by women and girls, and allows them to engage in other productive and community activities.

3.4 Food Security

The community at Zipwa defined food security as ‘when their granaries have maize in them, or if they have enough cash to buy maize Food security was also defined as having livestock which can be sold and then the income converted into maize’.

3.4.1 Ways of Accessing Food

Figure 3.6 Relative changes in food sources at Zipwa (n=64)



Data derived using before and after scoring with 25 counters

Figure 3.7 Overall contribution and utilization of food from the project garden at Zipwa

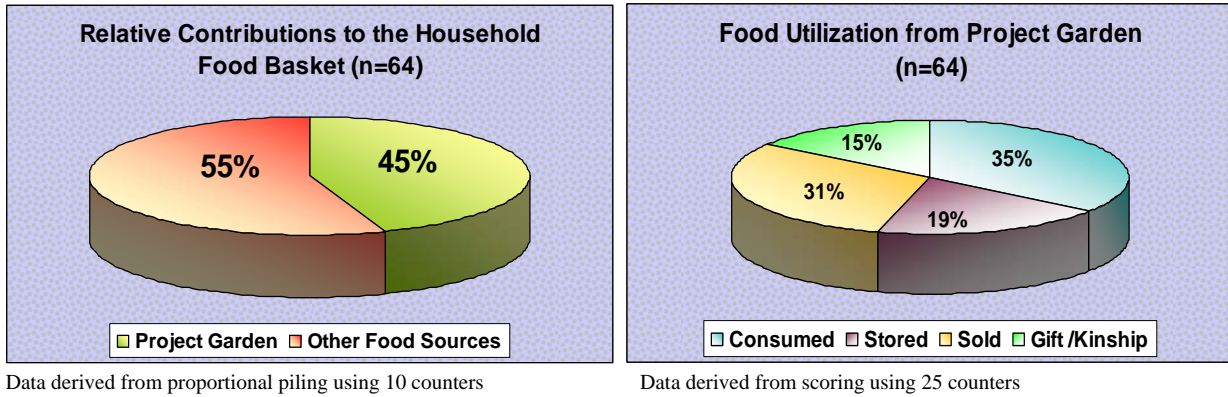
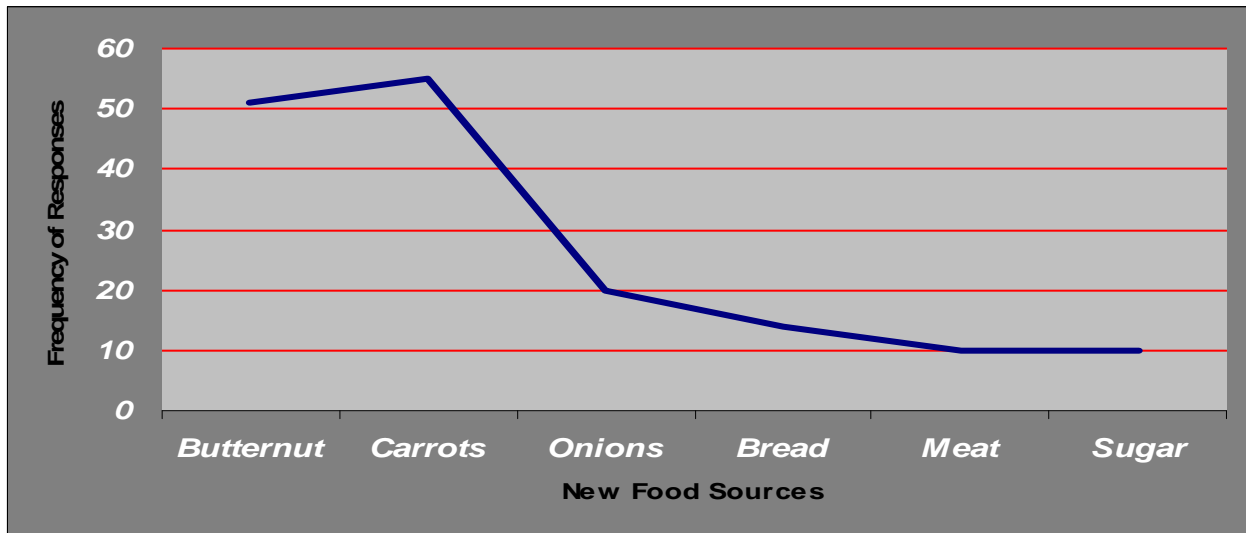


Figure 3.7 shows the relative contributions from the project garden towards the household food basket for 2007 in comparison with all other food sources. Utilization of the production from the project garden is also shown.

The sixty four project participants estimated a mean increase in the quantity of food in the household food basket of roughly forty five percent (45.7, 40.6, and 50.9⁶) since the project started. This estimate was derived by scoring a total of twenty counters against a nominal baseline of ten counters.

Figure 3.8 New foods regularly being consumed within the household as a result of the project (n=64)



Data derived from semi structured interviews, only the six most frequently mentioned foods are included in the figure. (Total number of responses =194)

⁶ Mean score 95% confidence interval

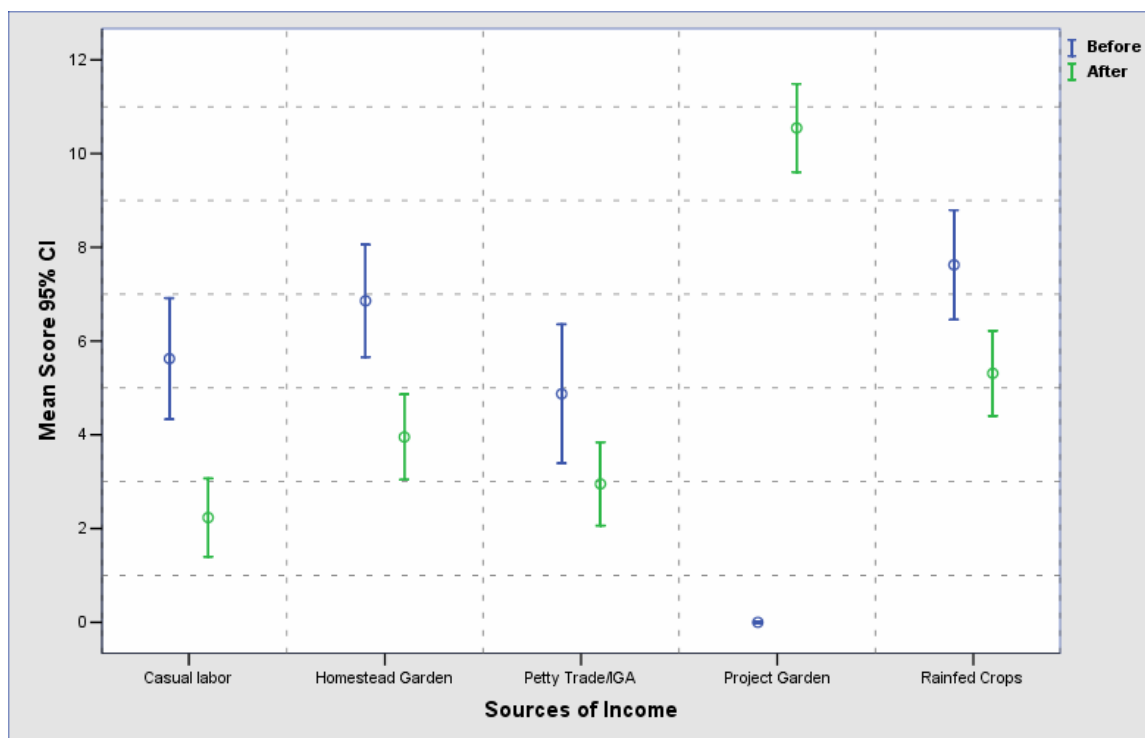
Table 3.2 Attribution table explaining changes in household food security

Factors	Number of Responses (n=64)
Project related factors*	
Water availability from the irrigation scheme has resulted in increased production*	24
Improved production due to new and better farming skills taught by the project*	6
Income from the sale of vegetables enables us to buy other foods (especially maize)*	25
Availability of food crops throughout the year from the project garden*	15
Improved nutrition due to the introduction of new crops into the food basket*	18

Data was derived using semi-structured interviews following the before and after scoring exercise on food sources. Only the top five responses are included in this table. Some people gave more than one response others gave none. (Total number of response = 95)

3.5 Income

Figure 3.9 Relative changes in income sources at Zipwa (n=64)



Data derived from before and after scoring using 25 counters

Notes on figure 3.9:

Casual labor represents income earned from on farm or other types of informal piece work.

Petty trade/IGA represents income from petty trade and other small business activities.

Homestead garden and Project Gardens represent income from the sale of vegetables.

Rain-fed crops: represents income from the sale of crops such as maize, cotton, groundnuts.

The sixty four project participants who took part in the assessment estimated a forty eight percent mean increase in household income since the project started. This estimate was derived by scoring a total of twenty counters against a nominal baseline of ten counters.

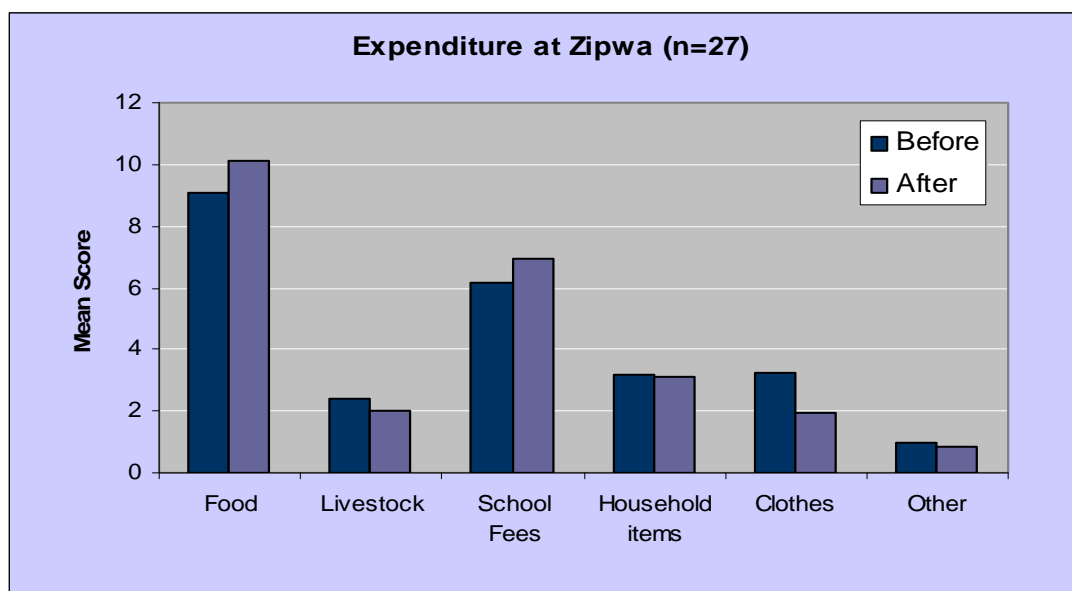
Table 3.3 Attribution table explaining changes in income at Zipwa

Factors	Number of Responses (n=64)
There was scarcity of vegetables in the area - high demand increased our income	7
More crops to sell due to large area under irrigation	13
Wider range of crops to sell	20
Fish and mat sales	3
Steady source of income from crop sales (mitigates the effects of inflation)	16
New sources of income from (savings clubs, project gardens, and trade)	9

Data was captured using semi-structured interviews following the two scoring exercises on income. The responses were then summarized into the five factors listed in the table. Factors scoring below 2% of the overall responses were not included in the table. Some people gave more than one response others gave none. (Total number of response = 70)

3.5.1 Expenditure

Figure 3.10 Changes in expenditure at Zipwa



Data derived from before and after scoring using 25 counters

3.6 Strengths and Weaknesses of the Project

Table 3.4 SWOT analysis at Zipwa

<p>Strengths</p> <ul style="list-style-type: none"> • This project brought people together and helped to build teamwork • It has improved food security at hh level • It has enabled us to buy school uniforms, books and pay fees for our children • It has encouraged hard work within the community • It has helped to enhance our savings clubs since members have money to save • It has brought alternative source of vegetable to the homestead gardens and markets • It has greatly improved nutritional status of the households • We now have healthier livestock because water is available • The river is now running throughout the year • There is water for domestic use • We get fish for food and reeds for mats from the dam 	<p>Weaknesses</p> <ul style="list-style-type: none"> • There was very low response from the community initially due to poor mobilisation • People living upstream have been stopped from ploughing near the river to avoid silting the dam • The non-beneficiary community members are stealing from the project due to high levels of unemployment • The plots are too small (each farmer has eight (1m X 6m) plots
<p>Opportunities</p> <ul style="list-style-type: none"> • With income from this project we are able to grow our savings clubs to provide financial security and buy hh goods • If the dam is protected, we could grow fruit trees around it and further enhance nutrition and food security status 	<p>Threats</p> <ul style="list-style-type: none"> • The huge water mass at the dam area is a threat to children who could drown in it – its should be fenced • Non-beneficiaries are jealous of the beneficiaries and may continue to steal from the gardens.

Findings summarized from two Focus Group Discussions



Income food and water benefits from the dams and gardens

4. DISCUSSION

4.1 Assessment Constraints and Methodological Limitations and Design Issues

The assessment took place during a period of acute food shortages, and when basic staples were available in the local market centers people would have to spend the day queuing up to purchase these supplies. This meant that many of the project participants were unavailable for interviews during the assessment and a number of household interviews had to be re-scheduled.

The research team also faced a number of challenges in designing the impact assessment. Due to other commitments under this research initiative, the FIC, Tufts team had to complete the assessment in Masvingo before September 2007, in reality this did not allow enough time for the project to have the desired impact on the livelihoods of the participants. This timing resulted in a number of design challenges and compromises.

The staggered status of implementation across all sites also added to the design challenges and ultimately influenced the decision to select Zipwa dam for the assessment. The FIC, Tufts researchers felt that one of the new innovations of the project was the establishment of the irrigated community gardens and for this reason the assessment was designed to focus on this component of the project. This more or less excluded Njenge and Chehemba dam sites from the assessment as the gardens had only been established shortly before the assessment started. Seeing as the dams already existed before the project started, albeit in various states of disrepair it would have been difficult to attribute many of the impacts provided by the dams solely to the rehabilitation works implemented under the project. This further justified the focus on

the community gardens although as mentioned the dam works had Zipwa had only been completed a few months before the assessment.

The formation of the saving and lending groups was also a new innovation introduced by the project however these groups were designed to be supported by income earnings from the community garden, and therefore this project component could not really be assessed in isolation from the garden component. Consistent with this the income and related food purchase benefits identified represent the combined impact of both project components.

The assessment tools were designed to capture impact against the community indicators collected during the field visit in February, 2007. This included indicators such as an increase in livestock assets, or home improvements resulting from the sale of crops from the project garden. The assessment took place only after two vegetable harvests from the community garden at Zipwa, and there was a notable absence of conversion of project derived income into livestock and other assets. In this sense the tools used only captured short term impact and were somewhat inappropriate in measuring impact against the longer term benefit indicators identified by the communities.

4.2 Overall Project Impact

The most important benefit identified by project participants was an improvement in overall food security (see figure 3.2). Project participants defined food security as maize availability or the cash to buy it, or the possession of livestock assets which can be converted into maize. The projects contribution to food security comes from the conversion of income from vegetable sales into maize, or the increase in vegetable consumption which allows households to stretch their maize budget.

The second most important benefit was the ability to engage in petty trade or start an income generating activity (IGA) with profits from the sale of vegetables from the project garden, or loans accessed through the projects lending groups⁷. The income generated either directly through the sale of crops from the project garden or indirectly through petty trade and other small business activities has helped people to pay for school fees and purchase household items, and these were scored as the third and fourth most important project benefits respectively.

Project derived income has also enabled people to pay back loans, and this income along with the projects food security benefits has reduced people's dependency on piece-work (casual labor) as a way of supplementing their income and supporting their families (see figure 3.2). These benefits can largely be attributed to the combined impact of the project garden and savings club activities⁸.

On a less positive note the project, or at least the dam appears to have created a certain level of disharmony between project and non-project participants at Zipwa and allegedly non-project participants have been stealing crops from the project garden (see table 3.4). This was the only real negative impact identified by

⁷ See Case Study # 1 for an explanation on how the savings groups operate, and for examples on the kinds of petty trade and income generating activities practiced.

⁸ This does not take into account kinship support and in kind food gifts or loans to non project participants in the community.

the project participants at Zipwa, although this may potentially be an issue that needs addressing at Njenge dam site.

4.3 Dam Benefits

Project participants at Zipwa scored water for irrigation as the most important benefit derived exclusively from the dam (see figure 3.3). In terms of impact this finding essentially points to the food and income benefits derived from the project garden and underscores the importance of food security as a key project benefit. Although the impact of this would largely apply to project garden participants, secondary data from the February 2007 field visit suggests that the dam has enabled other people to start cultivating homestead gardens^{vii}. It's therefore possible that some non- project participants may also be realizing some irrigation benefits from the dam.

The second most important benefit from the dam identified by project participants was the availability of water for livestock. The secondary data suggests that the time saving benefit on watering livestock ultimately translates into improved livestock health and milk production (see section 5). Water for domestic use was scored as the third most important benefit from the dam (see figure 3.3). Essentially this is used for cooking consumption and bathing.

Another important benefit has been the increased availability of fish for consumption and sale. During the February, 2007 field visit to Zipwa, project participants said it was possible to catch half a kilo of fish per day and this would feed a family of five for one meal. They expected that once the dam was completed they would be able to catch a kilo of fish per day.

Other benefits included the availability of water for brick making and reeds for making mats⁹ (see figure 3.3). Both these commodities are sold, and the bricks are also used for house construction and home improvements. Another important benefit from the dam has been the saving on time spent collecting water for both irrigation and domestic use. The results of the assessment estimate that on average the project participants are now saving over two hours a day on water collection for irrigation and domestic use.

⁹ The reeds are also used to fish for termites which are consumed and for thatching roofs (mid term visit finding)

4.4 Impact on Food Security

The perceptions of the project participants at Zipwa indicate that there has been a forty to fifty percent mean increase in the volume of the household food basket since the project started. Vegetables such as carrots, butternut and onions from the project garden are now regularly consumed, as are foods such as meat, bread and sugar which are purchased using income from the sale of crops from the project garden (see figure 3.8). Improvements in both the quality and quantity of the household food basket can largely be attributed to the project garden (see table 3.2).

The results indicate that over fifty percent of the household food basket now comes directly from the project garden (see figure 3.7) suggesting that for 2007 this is the single most important source of food for project participants at Zipwa.

Figure 3.6 shows the relative changes in the importance of different food sources from before the project and at the time of the assessment. The most dramatic changes include a decline in the importance of in-kind food assistance and the relative increase in the importance of the project garden as a new way of accessing food. The decline in the importance of food aid can partly be explained by the fact that food aid deliveries have been ratcheted down over time and are discontinued during and shortly after the harvest period. Nevertheless this does indicate a positive food security trend which suggests a decreased dependency on food aid.

A significant change in the importance of the project garden as a way of accessing food would be expected as this source of food was not available before the project, and this trend is reflected in the results (figure 3.6). However, in terms of impact what is most striking is that for the project participants this now constitutes the most important food source now available to them.

The results show a significant reduction in the importance of livestock production as a source of food (figure 3.6). This would be expected as milk production would typically decrease during the winter months as pasture deteriorates. This decline in production would be more evident during drought years such as the one in question. There also appears to have been a slight decline in the relative food basket contributions from rain-fed crops, homestead garden crops, and casual labor and a slight increase in the importance of fish, none of these changes was significant.

There was practically no change in the contribution from food purchases to the overall food basket (figure 3.6) and food purchases remain the most important household expenditure (see figure 3.9). This is interesting as one might expect that production from the project garden would compensate for and reduce the need to fill the household food deficit through purchases. A possible explanation for this is that the assessment took place shortly after a failed maize harvest. Considering that *sadza* (maize meal) is the primary staple and its availability is a key determinant of household food security, people might try to replenish their maize deficit through purchases. In the case of the project participants in Zipwa this was done using income from the sale of crops from the project garden (see table 3.2). There is some indication that some households are now purchasing and consuming meat, bread and sugar on a more regular basis than in the past (see figure 3.8). It's likely that these would represent an important food source even if they had only recently become a regular feature of the household food basket.

4.5 Impact on Household Income

Although the project participants suggested that they had observed an overall increase in income the effects of inflation and rising living costs would probably have offset much of these income gains. Nevertheless the project garden has essentially provided people with a new source of income, which at the time of the assessment was perceived to be the most important income source for the project participants at Zipwa (see figure 3.9). Before the project garden was established the most important source of income was from the sale of rain-fed crops. Although the relative importance of this income source has declined, this probably has as much to do with the drought and failed maize harvest as with the alternative income sources provided by the project. On the other hand it would be reasonable to suggest that the income from the project garden has compensated for the loss of income from rain-fed crop sales this year.

There has also been a significant decline in the importance of crop sales from home gardens although a shift in emphasis from homestead production to project garden production would be expected.

The decline in the importance of earnings from casual labor might in part be attributed to the drought and the subsequent shortage of on farm employment opportunities. On the other hand an increase in the number of people engaging in other forms of casual employment is considered a crisis warning indicator within the greater project livelihood zone^{viii}. Furthermore during the field visit in February 2007 savings group members in Zipwa suggested that casual labor is only engaged in as a last resort^{ix}. Within this context the decline in the importance of this income source suggests that the project participants are now better equipped to cope with the effects of drought and inflation, in this sense they are now better off than they were before the project started.

The results did not show any major changes in expenditure patterns. However, the major portion of household income is still being spent on food and schooling costs which were ranked as priority expenses by savings group members at Zipwa during the February 2007 field visit^x. The results show a slight decline in the amount now being spent on livestock assets and clothes which were identified as impact indicators by project participants. This can probably be explained in part by inflation and the rising cost of staples with more household income being diverted to cover priority expenses. Secondly many of the income benefits from the project will only be realized over time. It would be unrealistic to expect a household to save enough money to purchase cattle in the few months that they have been selling vegetables from the project garden. This would be a realistic expectation in two to three years.

5 Secondary Findings from Njenge Dam

This section of the report is largely based on the findings from the field visit in February 2007 but also includes data collected during focus group discussions in August 2007. The data from the February field visit was collected using semi structured interviews and focus group discussions with both direct project participants and non project participants from the community.

Participants at Zipwa identified the livestock benefits as the second most important impact of the dam. The baseline data indicates that livestock production is more important in Mwenezi district than in Chivi. Consequently it might be expected that in relative terms water for livestock would score higher in Chehemaba and Njenge than it did in Zipwa. During focus group discussions, a livestock owner at Njenge

gave an example of how the dam was having a direct impact on livestock health and production, and the resulting benefits at the household level. He maintained that the time he spent on watering his cattle before the dam was built could now be spent searching for better pasture and as a result his livestock were now healthier. The benefits from having healthier livestock meant they were now strong enough to use for plowing, he could sell them for more, and lactating cows were producing more milk. The gentleman estimated that before the dam was built a lactating cow would produce five liters of milk per day, whereas now he had one that was producing nine liters per day. With the nine liters of milk, typically four would be consumed within the household, and five liters would be sold. He would then spend the income from the milk sales on school books for his children^{xi}.

An important cross cutting benefit of the dams is the time that is now being saved on water collection. The example of the livestock owner demonstrates how the time saved on watering cattle has had a positive impact on livestock health and production. Again the time savings benefits at Njenge are likely to be more pronounced than those at Zipwa. During the February field visit, garden committee members informed the research team that before the dam was built they had to travel five kilometers to collect water for the household. Typically one woman from each household would collect water twice a day which could take up to six hours. The dam has therefore provided them with both the water and the time to cultivate vegetables. The ladies said they no longer have to get up early to collect water, and besides having the time to cultivate, they can also commit more time to other household chores, such as preparing food for their children^{xii}. They also stated that before the dam was built they only had time to bathe twice a week^{xiii} whereas now they can wash as often as possible. This signifies a fairly dramatic psychological impact at the individual level without considering the health benefits of being able to wash on a regular basis.

During the February 2007 field visit project garden participants at Njenge informed the research team that marula nut cracking had been the most important source of income before the dam was built. In 2007 income from the sale of vegetables was ranked as the most important source of income followed by income from selling fish. Marula nut cracking and brick sales were ranked third and fourth respectively^{xiv}. These changes in income sources can be directly attributed to the dam.

6. Conclusions

It needs to be emphasized that the assessment took place shortly after the implementation of production activities. Consequently the assessment is unlikely to have effectively captured the longer term impact expected from the project. It would be reasonable to expect the project benefits to become more evident over time. Changes in the kind of impact being felt by project participants might also be expected. For example income benefits would probably manifest themselves in changing expenditure patterns and a greater investment in livestock assets. In turn this might result in indirect food/nutrition and income benefits from livestock production.

Nevertheless the findings of the assessment demonstrate that the project has contributed to a significant improvement in household food security amongst the project participants in Zipwa. The project garden has provided the participating households with a new source of food, a steady supply of food, and nutritionally more diverse types of food. The project has also had a noticeable impact on the income of the participating

households. The most apparent changes involve the provision of new sources of income such as that derived from the sale of crops from the project garden. The project has also resulted in changes in the relative importance of different income sources. The findings suggest that a good portion of this income is also spent on food further promoting household food security. These benefits have resulted in a positive change in the livelihoods assets of the project participants, most notably there has been a short term improvement in human, financial and physical capital. Over the longer term it can be expected that financial capital from the sale of vegetable crops will be converted into financial and physical capital such as livestock, poultry, ox carts, and farming implements.

Table 6.1 A summary of the key project impacts on livelihoods assets

Capital Assets	Project Impacts
Human	<ul style="list-style-type: none"> Improved household food basket-both quality and quantity suggesting improved health and nutrition, more time for production activities, improved ability to pay for school fees (education) - knowledge of new production practices.
Financial	<ul style="list-style-type: none"> Project gardens - Income diversification and new sources of income Savings groups - petty trade and other income generating activities
Social	<ul style="list-style-type: none"> Establishment of garden committees.
Physical	<ul style="list-style-type: none"> Dams and irrigation infrastructure
Natural	<ul style="list-style-type: none"> Fish, reeds, water from the dams

Secondary data suggests that a similar impact from the project may be realized at the other two dam sites. It also indicates that some of the benefits may be more pronounced at the other two sites, particularly those benefits derived from fishing and livestock production. However, at Chehembra dam the community is in the process of re-stocking the dam with fish in order to promote sustainable fish production in the longer term. Clearly this potential benefit will not be realized for some time. Therefore, different benefits and different levels of impact can be expected across the three communities, and these are likely to change over time.

7. Follow up Issues

In principle each dam is a community asset and so it follows that some of the project benefits would be shared between project and non-project participants alike. Having said this, at Njenge dam there appeared to be some resentment against non-project community members using the dam. Project participants provided the labor to construct/rehabilitate the dams, and in the case of Njenge this seems to have created a feeling of ownership amongst the project participants. Similar sentiments were expressed during focus group discussions at Zipwa and Njenge, project participants raised the concern that non-project participants were stealing crops from the project garden. When the participants at Njenge were asked what would be an appropriate response to this, the proposed solution was to bring the police in and arrest the offenders. During the same exercise participants suggested that they introduce crocodiles as a way of discouraging non-project participants from fishing in 'their dam'. If this sense of ownership does exist then access to the dam might be restricted. If this is the case then caution should be applied when estimating the extent to which the dam may be benefiting the community at large, indeed its existence could be a

potential source of conflict, and this issue should be addressed in partnership with the communities at both sites.

Based on the SDCRM model a fence is constructed to protect the dam and the catchment area from livestock with the provision of a downstream water trough. Without such a fence the quality of water for human consumption may be compromised and there is an increased likelihood of the dam silting up. Although the provision of such a fence was included in the project proposal these fences were not constructed. Discussions with CARE project staff revealed that this was largely due to challenges in getting the local authorities to mobilize community labor to build the fence. This issue needs to be addressed if the longer term benefits from the dam are to be realized.

The assessment did not investigate the dam management systems but considering the history of the dams and particularly the one at Zipwa, it will be important that systems are put in place for dam maintenance and repair. If these systems have not been set up then their will be likely implications for the long term sustainability and benefits from the dam. These 'systems' should include a clear understanding of who is responsible for repairing the dam, pumps, and pipes, and who will cover the cost of these?

Endnotes

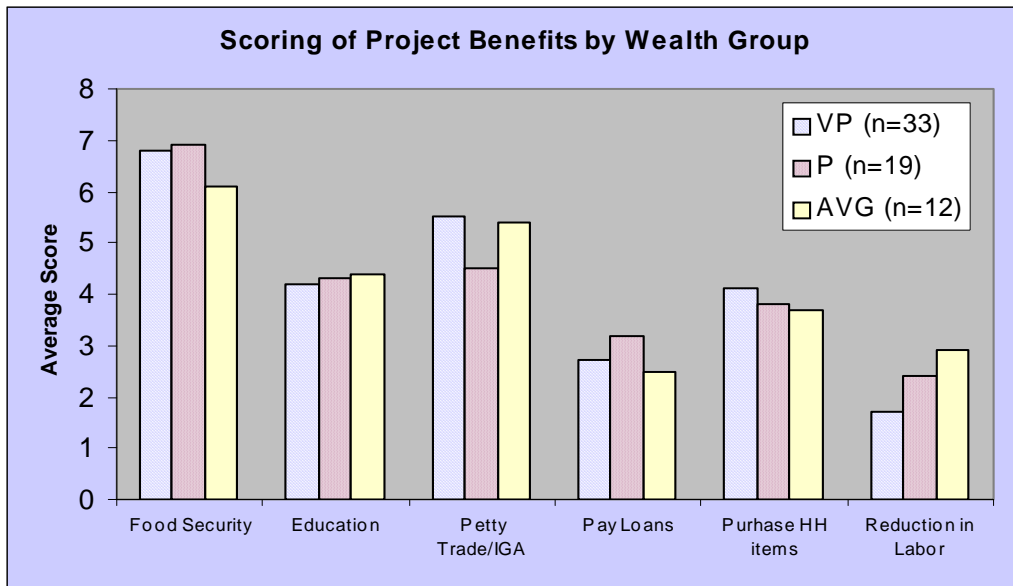
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- ⁱ Bill & Melinda Gates Foundation. (2005) Request for Proposals; Number GHS-05-01. Sub-Saharan Africa Famine Relief Effort “Close to the Brink, September 2005
- ⁱⁱ Bill & Melinda Gates Foundation. (2005) Request for Proposals; Number GHS-05-01. Sub-Saharan Africa Famine Relief Effort “Close to the Brink, September 2005
- ⁱⁱⁱ CARE, Zimbabwe. (2005) Zimbabwe Dams and Gardens; A project proposal for the Sub-Saharan Africa Famine Relief Effort, October, 14th 2005
- ^{iv} CARE, International Zimbabwe (2002) Community Resources Training Manual, Harare 2002
- ^v CARE, International Zimbabwe. (2005) Zimbabwe Dams and Gardens; A project proposal for the Sub-Saharan Africa Famine Relief Effort, October, 14th 2005
- ^{vi} Associated Press. (2007) 2 die in stampedes at Zimbabwe exhibit; (accessed on 3rd September 2007) available at http://news.yahoo.com/s/ap/20070902/ap_on_re_af/Zimbabwe_stampedes
- ^{vii} FIC, Tufts (2007) Feinstein International Center, Tufts University Mid Term Visit to CARE, International Dams and Gardens Project in Masvingo Zimbabwe February 2007. A Report submitted to the Bill & Melinda Gates Foundation March 2007
- ^{viii} ZIMVAC, FEWSNET (2005) Zimbabwe Livelihoods Profiles (accessed on 02/08/07) available from <http://www.fews.net/livelihoods/files/zw/profiling.pdf>
- ^{ix} FIC, Tufts (2007) Feinstein International Center, Tufts University Mid Term Visit to CARE, International Dams and Gardens Project in Masvingo Zimbabwe February 2007. A Report submitted to the Bill & Melinda Gates Foundation March 2007
- ^x FIC, Tufts (2007) Feinstein International Center, Tufts University Mid Term Visit to CARE, International Dams and Gardens Project in Masvingo Zimbabwe February 2007. A Report submitted to the Bill & Melinda Gates Foundation March 2007
- ^{xi} FIC, Tufts (2007) Feinstein International Center, Tufts University Mid Term Visit to CARE, International Dams and Gardens Project in Masvingo Zimbabwe February 2007. A Report submitted to the Bill & Melinda Gates Foundation March 2007
- ^{xii} FIC, Tufts (2007) Feinstein International Center, Tufts University Mid Term Visit to CARE, International Dams and Gardens Project in Masvingo Zimbabwe February 2007. A Report submitted to the Bill & Melinda Gates Foundation March 2007
- ^{xiii} FIC, Tufts (2007) Feinstein International Center, Tufts University Mid Term Visit to CARE, International Dams and Gardens Project in Masvingo Zimbabwe February 2007. A Report submitted to the Bill & Melinda Gates Foundation March 2007

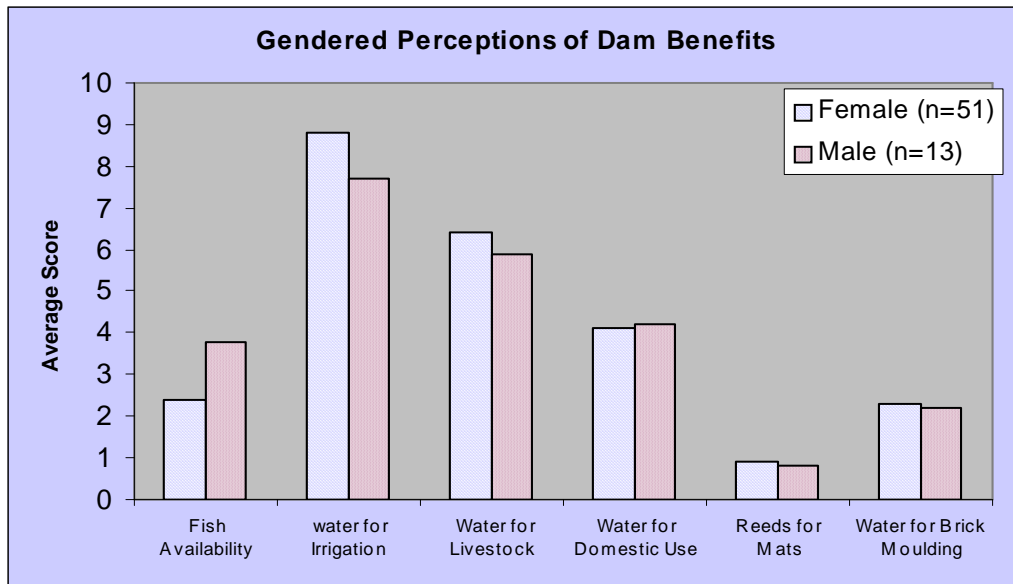
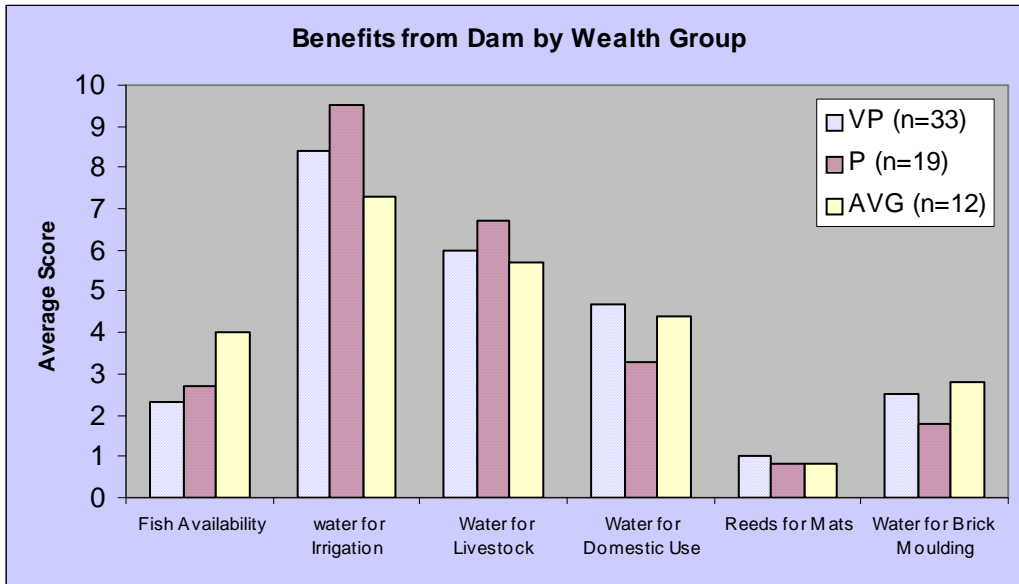
^{xiv} FIC, Tufts (2007) Feinstein International Center, Tufts University Mid Term Visit to CARE, International Dams and Gardens Project in Masvingo Zimbabwe February 2007. A Report submitted to the Bill & Melinda Gates Foundation March 2007

ANNEX 1

Disaggregated Analysis of Project Benefits

Note: The following figures have been included in the report as they may point to some interesting wealth and gendered perceptions of impact. It should be emphasized that once disaggregated the sample size for most of the specific sub sets would not be representative.





Notes:

VP (very poor) represents the poorest category of households assessed

P (poor) represents the middle socio economic group of households assessed

AVG (average) represents the wealthiest category of households assessed

ANNEX 2

Notes from a Meeting with Savings Group Members at Zipwa – February 2007

All the saving and lending group participants are also involved in the community garden. The focus group discussion focused on these two aspects of the project. Being complementary activities it was difficult to treat them separately, as income derived from the garden directly supports the lending groups.

By February 2007 there were seventy members of the savings groups in Zipwa (7 groups of 10). One of the members explained how the process worked for her group. Initially each member of her group had contributed ZWD 300 from the income they had earned in the community garden. They later decided to increase everyone's contribution to ZWD 1000 to compensate for inflation. During the second loan disbursement each member contributed ZWD 2000.

From the original ZWD 3000 raised (ZWD 300 contribution each) the money was lent to three women who paid the group back a total of ZWD 3,600 (ZWD 600 interest).

In the second loan disbursement (ZWD 13,600) the money was lent to four members, but the group decided to increase the interest to fifty percent, and so the borrowers would have to have repaid the group ZWD 20,400. Borrowers are expected to repay the loan and interest in a month, and at the time of the visit this particular group claimed to have saved close to ZWD 75,000. Interest rates remain at fifty percent.

Amongst all seven groups the twenty six participants' only knew of one defaulter. However, the lady in question had fractured her ankle in an accident, and so the group not only gave her a longer grace period but actually lent her some more money.

From the first group of loan recipients (ZWD 3000 disbursement), one of the ladies used the loan to buy sweets (candy) and bananas. She then sold these and used the profit to repay the loan and purchase two school exercise books for her kid. The same lady then took out a second loan (ZWD 13,600 group) and used the money to buy maize meal (sadza) and sugar which she used for household food consumption. She plans to repay this loan using money she expects to earn from selling part of a tomato crop from the community (project) garden.

A second lady had used the first loan (ZWD 3000 disbursement) to purchase sweets. She then sold the sweets and used the profit to purchase wool for knitting clothes. She intended to sell these clothes as well as make them for her kids. She then received ZWD 5000 from the second loan disbursement (ZWD 13,600/4 people). With this she purchased more wool and was able to make 3 jerseys which she sold for a total of ZWD 50,000.

She used or planned to use the money in the following ways:

- | | |
|--------------------------------|------------|
| 1. Loan and interest repayment | ZWD 7,500 |
| 2. School fees | ZWD 28,000 |

She planned to use the remainder of the money to brew beer for small scale commercial purposes.

Another recipient from the group purchased wheat seeds with the loan, once harvested she made (bread) buns out of the wheat and she is in the process of selling these. Given the timeframe for loan repayments she had to use profits from her tomato harvest sales (from the project garden) to pay of the first loan. However she is now using profits from bun sales to pay of the second loan. When asked the members who had not received loans suggested that they would generate income from borrowed loans through the purchase and sale of sweets, vegetables, bananas and wheat (buns). In the event that they can't pay back a loan, the ladies said they would work as casual laborers for wealthier farmers in the area. When this kind of work is available one might expect to earn ZWD 5000 per day. It appeared as though this kind of work would only be undertaken as a last resort.

When the group was asked how they had, or planned to use the income earned from these activities, most of the women indicated that they would invest in livestock, poultry or engage in income generating activities (IGA) such as selling buns. Out of the twenty six participants seven women had bought poultry, five of these said that they would not have been able to purchase these without the income from the project garden. Poultry benefits include the consumption and sale of both eggs and meat. All seven of these women did have chickens before the project started, but the income from the garden allowed them to increase their stock. Eighteen of the other meeting participants indicated they would purchase chickens if they earned more income from the project garden.

Ten members of the group were involved in IGA such as selling buns, or buying and selling sweets, fruits and vegetables. Seven of the women were involved in on farm casual labor, and two maintained that at present their primary source of income was from the sale of vegetables grown in the project garden.

ANNEX 3

Notes from a meeting with conservation farmers at Zipwa – February 2007

The research team briefly visited two farms that had participated in the projects conservation farming training. The team talked to three women and one man from the households attached to the two farms. Fifty farmers had participated in the CARE conservation training; sixty three farmers actually applied the technique to the maize harvest. The additional thirteen farmers had learned the practice through observation and discussions with the trained farmers. One of the farmers told the team that all sixty three farmers that had applied the technique had harvested some maize this year; whereas those that had used traditional techniques hadn't harvested any maize at all. The lady in question said she had harvested 50 kilos of maize which would feed her family for two weeks. In a normal year she would expect to harvest 500 kilos, however she felt that if she hadn't applied the conservation farming technique this year she wouldn't have harvested anything.

ANNEX 4

Community Map – Zipwa Dam

