COMMUNITY RESOURCES MANAGEMENT GUIDELINES

CARE International In Zimbabwe

CARE ZIMBABWE

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FORWORD

This guidelines document aims to pass on field experience and the lessons learned from CARE Zimbabwe's rural development initiatives over the past six years. It has been developed as a practical reference tool for implementation of CARE's Small Dams and Community Resources Management Programme (SDCRMP). The content and processes included in the guidelines detail the theory and necessary steps for successful implementation and post-project community-based management.

The guidelines have been prepared as a resource kit for use by programme and field staff in implementation. The document has been designed in a programme-specific context to be supported with complementary manuals[1]. In particular, it is used in conjunction with CARE Zimbabwe's, **Community Resources Training Manual**.

The context for the programme in Zimbabwe, and the guiding principles and organisational structures behind it, are presented in a Background section. Following this introduction, each section follows steps in the implementation process. Section 1 reviews the programme design process. Section 2 and 3 discuss pre-implementation and site selection activities. Community management structures and systems are explained in Sections 4 and 5. Section 6 to 11 detail steps for the technical areas of implementation, and Section 12 identifies complementary activities to link to these areas. Section 13 provides methods for monitoring and evaluation.

Users of these guidelines should be aware that they have been evolving over a number of years and represent the most appropriate (and successful) implementation methodology to date. We have included considerable documentation on the programme's context and past experience, as each has played an important role in defining how and why we do certain things. Nonetheless, it is recognised that the specific attitudes, needs, interests, etc. in each community must be considered and the methodology (and/or sequence) modified accordingly. We also recognise that these guidelines are not static and should be constantly updated and improved based on practitioners' experience. In addition, though these guidelines have been designed with a specific focus on small dam rehabilitation as the development entry point, the approach is easily adaptable and suitable to other types of natural resource management activities and agricultural projects.

Finally, the guidelines are part of an overall package of training, technical and reference material either developed for or used by programme staff and field officers during implementation. Each section refers to the specific, complementary materials to be consulted.

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[1] Specific complementary materials include: (1) *A Guide for Farmers on Good Land Husbandry* (15 titles in series, ZFU/Agritex publication); (2) *Guidelines for Participatory Catchment Planning* (CARE Zimbabwe); (3) *Vegetable Production in Irrigated Gardens* (CARE Zimbabwe); (4) *Community Resources Training Manual* (CARE Zimbabwe); (5) *Community Resources Training Manual - Community Mobiliser Module* (CARE Zimbabwe)

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Communities
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TABLE OF CONTENTS

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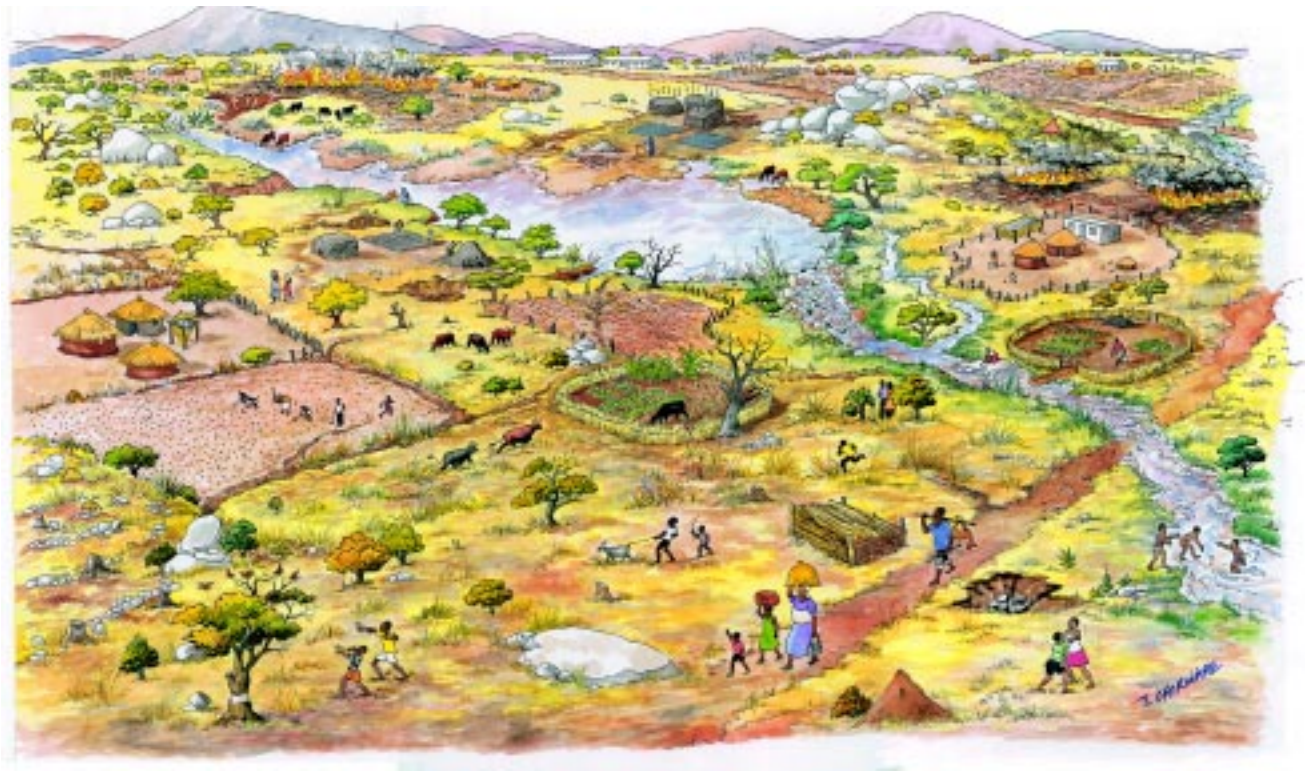
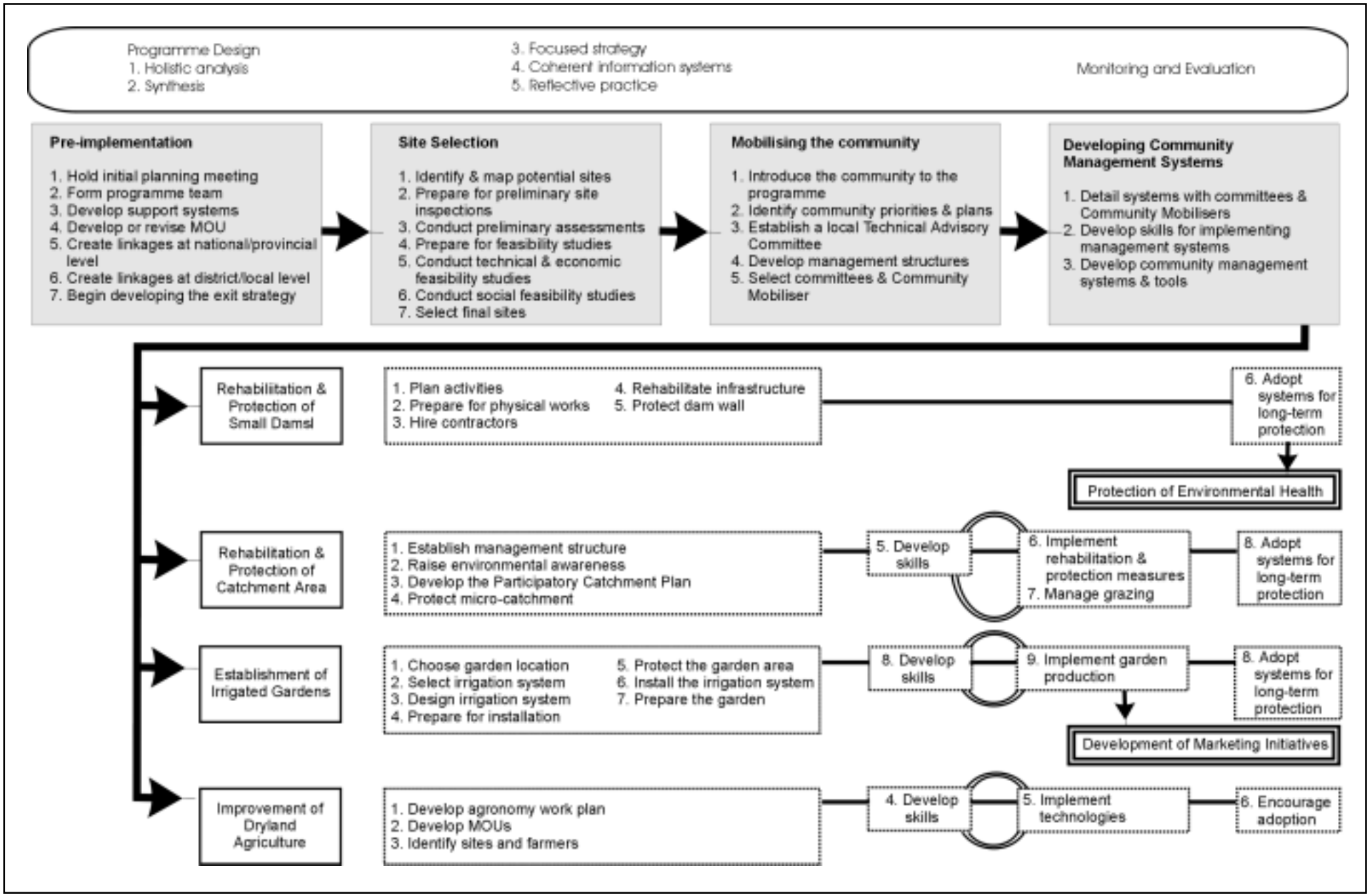


EXAMPLE OF POOR PRACTICES IN A SMALL DAM CATCHMENT

EXAMPLE OF GOOD PRACTICES IN A SMALL DAM CATCHMENT


Programme Design
1. Holistic analysis
2. Synthesis
3. Focused strategy
4. Coherent information systems
5. Reflective practice
Monitoring and Evaluation
Pre-implementation
1. Hold initial planning meeting
2. Form programme team
3. Develop support systems
4. Develop or revise MOU
5. Create linkages at national/provincial level
6. Create linkages at district/local level
7. Begin developing the exit strategy
Site Selection
1. Identify & map potential sites
2. Prepare for preliminary site inspections
3. Conduct preliminary assessments
4. Prepare for feasibility studies
5. Conduct technical & economic feasibility studies
6. Conduct social feasibility studies
7. Select final sites
Mobilising the community
1. Introduce the community to the programme
2. Identify community priorities & plans
3. Establish a local Technical Advisory Committee
4. Develop management structures
5. Select committees & Community Mobiliser
Developing Community Management Systems
1. Detail systems with committees & Community Mobilisers
2. Develop skills for implementing management systems
3. Develop community management systems & tools
Rehabilitation & Protection of Small Dams
1. Plan activities
2. Prepare for physical works
3. Hire contractors
4. Rehabilitate infrastructure
5. Protect dam wall
6. Adopt systems for long-term protection
Protection of Environmental Health
Rehabilitation & Protection of Catchment Area
1. Establish management structure
2. Raise environmental awareness
3. Develop the Participatory Catchment Plan
4. Protect micro-catchment
5. Develop skills
6. Implement rehabilitation & protection measures
7. Manage grazing
8. Adopt systems for long-term protection
Establishment of Irrigated Gardens
1. Choose garden location
2. Select irrigation system
3. Design irrigation system
4. Prepare for installation
5. Protect the garden area
6. Install the irrigation system
7. Prepare the garden
8. Develop skills
9. Implement garden production
8. Adopt systems for long-term protection
Development of Marketing Initiatives
Improvement of Dryland Agriculture
1. Develop agronomy work plan
2. Develop MOUs
3. Identify sites and farmers
4. Develop skills
5. Implement technologies
6. Encourage adoption

Background and Guiding Principles

BACKGROUND AND CONTEXT

INTRODUCTION

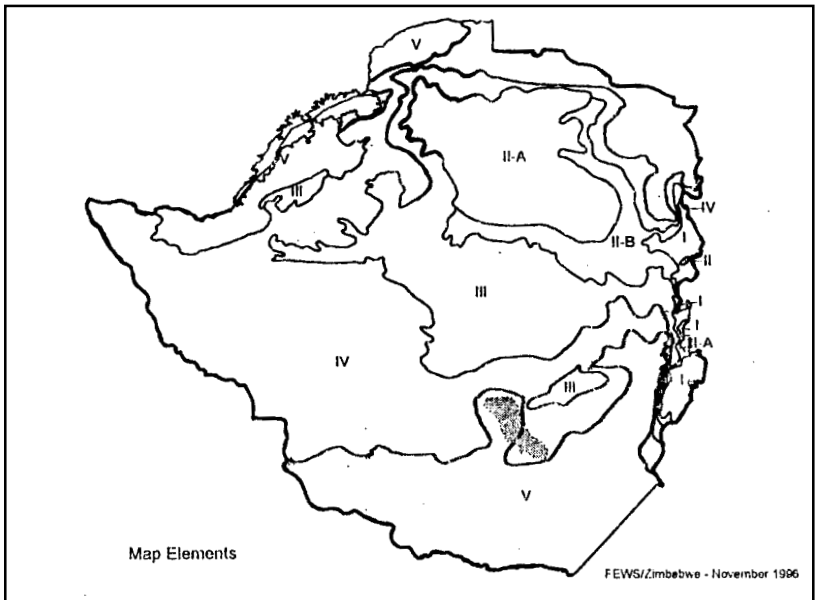
Development has as its ultimate objective the enhancement of human capacities to enable people to manage their own lives and their environment. CARE Zimbabwe's belief, supported by practical experience over the past six years, is that a participatory, household livelihood orientation best helps meet this objective. Achieving full and effective participation in development activities results from the way the community is approached by field staff, extension workers and technical consultants. Many development projects have not succeeded because target communities or households failed to change behaviours or attitudes that were critical to project success. Commitment and support to a project only happens by involving a broad base of the community in decision making, and engaging in a continuous process of participatory education from the start.

Experiences and methodologies for achieving success in rural development must be shared amongst development practitioners. This document has been prepared by CARE Zimbabwe in partnership with government agencies, local and international non-governmental organisations (NGOs) and research institutions as a guideline on how to establish and run community-based resource management programmes for food and economic security within a Household Livelihood Security (HLS) framework.

THE DEVELOPMENT CONTEXT IN ZIMBABWE

The Communal Areas of Zimbabwe

In order to understand poverty in Zimbabwe, the politics of land tenure must be appreciated. Five land use categories exist and are defined by the type of tenure system and the size of household farm holdings (i.e., Communal Area lands, large-scale commercial farms, small-scale commercial farms, resettlement areas, and urban centres, national parks and state forests). These areas are distributed over five "Natural Regions" based on rainfall and other environmental characteristics.



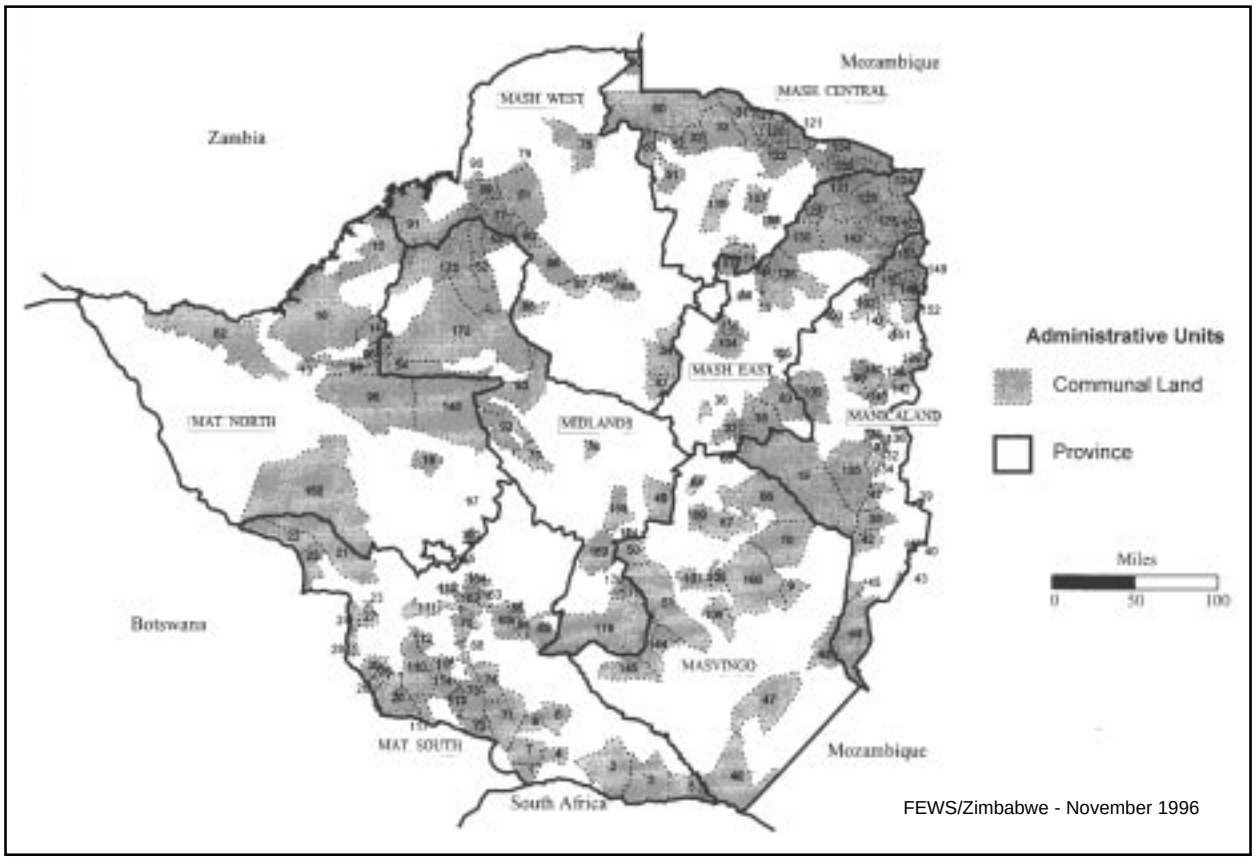
Natural Region I	above 1 000 mm rainfall per annum, **best** agricultural land
Natural Region II	750 - 1 000 mm rainfall per annum
Natural Region III	650 - 750 mm rainfall per annum
Natural Region IV	450 - 650 mm rainfall per annum
Natural Region V	below 450 mm rainfall per annum, **worst** agricultural land

Communal Areas (CAs) are occupied by subsistence farming households, and are mostly confined to the poorest land in the lowest rainfall regions. These CAs were created gradually from 1894, originally established by the colonialist regime as reserves for the various "tribal" groups. Today over 75% of the rural population and approximately 56% of Zimbabwe's total population reside in the CAs (CSO, 1994). In land area, CAs in the lowest rainfall regions (IV and V) cover over 60% of the total land area of Zimbabwe, mostly in Matabeleland North, Matabeleland South, Midlands and Masvingo provinces.

The Situation in the Communal Areas

The CAs are the most densely populated areas outside urban centres and are settled by subsistence farming households that often lack material resources for efficient land and water management. Land is used mainly for rain-fed agriculture and for free grazing of livestock. However, over 75% of the CAs lie within regions least favourable for crop and livestock production. Small cultivable fields, usually averaging less than 3 hectares, are allocated by traditional community leaders for use by farming households, with land ownership and tenure rights vested in the community on behalf of the state[1] . Over 80% of households in the CAs live below the "basic needs" poverty line.

CAs in the driest regions (IV and V) are highly drought-prone with average rainfall of less than 650 mm annually; these areas are typical of Masvingo and Midlands provinces in southern Zimbabwe,



[1] In Communal Areas, the kraal is generally acknowledged as the unit with which rural people are most comfortable. Each kraal is a collection of households under the traditional authority of a kraalhead or *Sabhuku.* The *Sabhuku* is the lowest level of a traditional authority, with a pyramid of Headmen (*Ishe)*, Sub-Chiefs, Chiefs and Paramount Chiefs above him. While the kraal is universally recognised, it is not an administrative unit. The smallest unit recognised by state planning authorities is the village, administered by a Village Development Committee (VIDCO) consisting of elected representatives from several kraals. The overlapping and sometimes contradictory powers of the traditional and state systems have been a perennial subject for debate (Lovell, 2000).

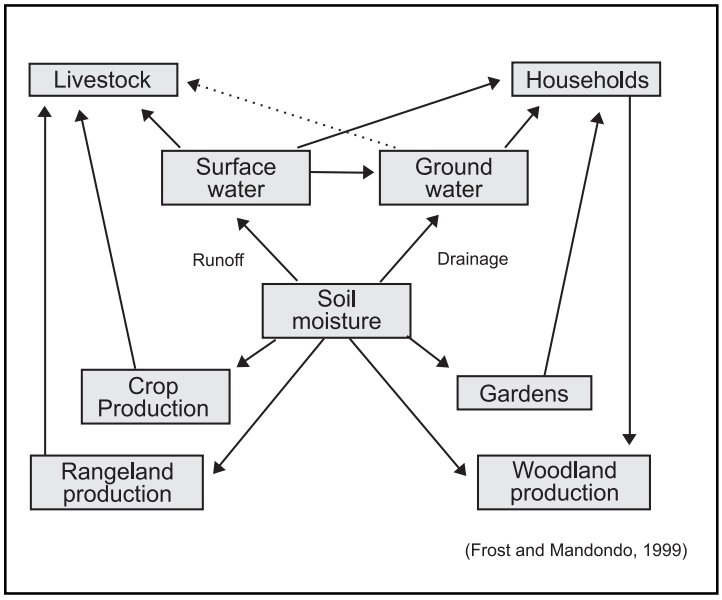
CARE's main area of operation. Household livelihood security is limited by multiple constraints, of which water supply is arguably the most critical. The only available water in most regions is from surface water run-off during rainfall, limiting opportunities for agricultural production. Food security is also constrained by the minimal access to affordable agricultural inputs, the marginal condition of agricultural lands, and the poor practices of farmers and other land users that are depleting natural resources. When seasonal rains arrive, they are intermittent and high intensity, and erode the fragile and over-used soils in these areas; 43% of land in the Communal Areas suffer moderate to very extensive soil erosion, compared with 5% of land in commercial farm areas.

In addition to agricultural constraints, economic security in the CAs is constrained by inaccessible financial and non-financial services, few formal and informal employment opportunities, limited access to markets, and high inflation rates that erode real incomes and wages. Social security is constrained by declining government services in health, education and infrastructure maintenance, and a heavy burden from HIV/AIDS as family members return to rural areas for terminal and orphan care.

Subsistence farming households in the Communal Areas of Zimbabwe are not well equipped with information and resources to deal with these constraints, and are often totally dependent on scarce and degrading land and water resources for survival. Hence the prevalence of poor farming and grazing practices, mismanagement of meagre water resources, and increased soil erosion, deforestation, and land degradation, which, in a vicious circle, exacerbate poverty and general under-development. Though the government has maintained a policy of land reform and redistribution of commercial farms in favour of communal farmers since 1980, it has only been in the past two years that significant redistribution has occurred as a result of compulsory acquisition. Unfortunately, it is as yet too early too tell if these efforts can effectively address the multitude of problems facing smallholder farmers.

A Critical Development Need

Water resources in semi-arid CAs of southern Zimbabwe are critical for improving rural livelihoods and the natural environment. For humans, they provide drinking water, irrigation water for food production, and water for livestock and domestic uses. Many water-related activities have a high economic value (e.g., irrigated gardens). They can play an important role in household income and livelihood strategies, avoiding over-reliance on single production activities such as rain-fed cultivation of marginal lands. Water is essential to maintaining the function of ecosystems and resources that households depend on both directly and indirectly. Unfortunately, water shortages, particularly in CAs, are frequent. Since 1980 Zimbabwe has suffered a series of recurring droughts, with the 1991/92 drought causing very extensive losses to crops and livestock in both commercial and communal farming sectors.



(Frost and Mandondo, 1999)

Recognising this critical development need, the Government of Zimbabwe (GoZ), NGOs, and donors have co-ordinated efforts and resources over the past 30 years to alleviate water shortages in CAs through the construction and/or rehabilitation of productive water points. A productive water point is a public water point, designed and implemented to provide water supplies for domestic and economically productive purposes (Lovell, 2000). Of particular significance, approximately 600 small-to-medium-sized, low technology earthen embankment dams (average capacity of 100,000 cubic meters) were constructed in southern Zimbabwe during this period to trap and conserve surface water run-off in shallow reservoirs.

These small-to-medium-sized earthen dams offer a very appropriate and often cost-effective way of improving water access and availability for a significant number of households in the semi-arid CAs. Indeed many communities, usually with some help from GoZ and NGOs, have successfully constructed small earthen dams by mobilising local resources and work teams. Provincial Administrations for the CAs still receive long lists of applications annually from communities requesting assistance to build small-scale dams.

Unfortunately, for various technical and social reasons, a large number of small dams constructed during these years either failed to meet community water needs or developed serious structural defects. Reasons range from poor siting and design of dams, to physiographic constraints, to inadequate provision of information on maintenance to communities. Consequently, the financial investments made to build a large number of small-to-medium-sized dams in the CAs have not realised full potential benefits for communities needing water resources.

In analysing this situation, CARE found that the most debilitating impacts on dam sustainability were due to poor or non-existent community management resulting in excessive siltation. This was especially the case with regard to the unchecked use of dam reservoirs as livestock watering holes, poor agricultural practices in the catchment areas, and no local management of common property resources. CARE recognised that many dams were either under-used relative to the purposes for which they were intended, or were rapidly degrading because of competitive multi-purpose uses.

CARE ZIMBABWE'S PROGRAMME

CARE International in Zimbabwe began working in Communal Areas in 1993 in response to emergency conditions brought about by the prolonged drought in 1991/92. With funding support from a variety of donors, CARE Zimbabwe has established a head office in Harare and field sub-offices at Masvingo in Masvingo Province and Zvishavane in Midlands Province.

Initial CARE Zimbabwe efforts focused on "food for work" (FFW) programmes funded in communities most affected by drought conditions. Projects were designed to encourage self-help improvement efforts in exchange for receipt of basic food commodities. Community-managed work teams were organised to build bridges, repair village roads, construct schools and medical posts and, most notably, rehabilitate small dam catchment areas. The most significant results under the FFW programme were obtained through community projects that centred on the renovation and community management of 9 small dam reservoirs at village sites located in Mberengwa and Zvishavane districts in Midlands Province.

Following these experiences, CARE moved from emergency to development work, starting with implementation of the Small Dam and Community Resources Management Programme (SDCRMP).

Over time, the implementation methodology appropriately shifted to a more sustainable development-oriented community management approach. The focus of activities also expanded geographically to include Masvingo Province.

Concurrently, a number of other rural programmes were developed to look at the wider constraints facing rural households in these areas. By 1999, CARE Zimbabwe was implementing a variety of stand-alone projects in three sectors; Agriculture and Natural Resources (ANR), Health, and Small Economic Activity Development (SEAD). At this time, CARE Zimbabwe identified the need to adopt a formalised livelihoods-based programming strategy to better integrate these programmes and address the multiple constraints impeding improvement to household livelihood security of the poor. Based on CARE's global experience, an overall livelihoods approach results in more relevant sectoral interventions, since designs are founded on a holistic understanding and analysis of household livelihoods (see next section).

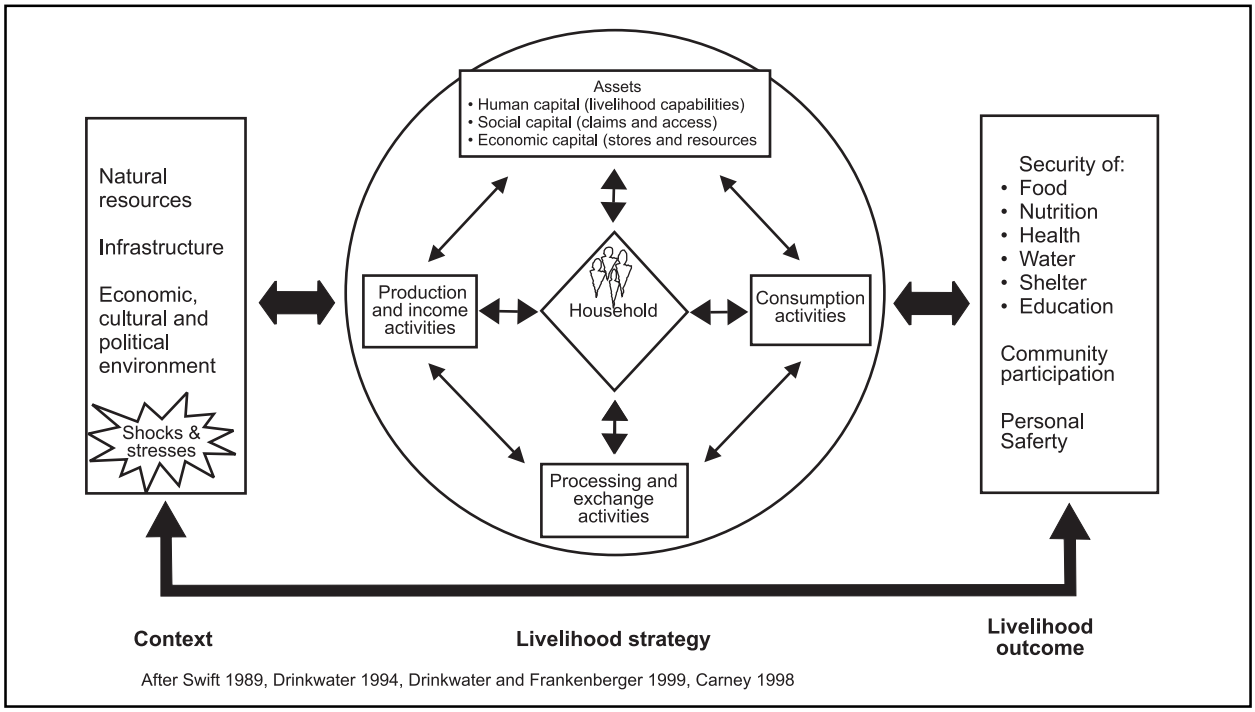
GUIDING PRINCIPLES

HOUSEHOLD LIVELIHOOD SECURITY

The principle of "Household Livelihood Security" provides the overall direction, content and long-term goal of all CARE Zimbabwe programmes, including SDCRMP.

The HLS Framework

CARE International's Household Livelihood Security (HLS) model is an organising principle and integrating framework for livelihoods-based assessment and programming. HLS was originally defined as adequate and sustainable access to income and other resources to enable households to meet basic needs. Basic needs include adequate access to food, potable water, health facilities, educational opportunities, housing, and time for community participation and social integration. Of late, the concept of HLS has been broadened to incorporate the notion of rights and rights-based approaches[2] . A livelihood includes the capabilities, assets, and activities required for a means of living. Households must have secure ownership of, or access to, resources and income earning activities (including reserves and assets) to offset risks, ease shocks and meet contingencies. Within the HLS framework, livelihoods go well beyond activities concerned only with immediate income generation and food production and look at the underlying causes of poverty.



After Swift 1989, Drinkwater 1994, Drinkwater and Frankenberger 1999, Carney 1998

[2] CARE's definition of a right-based approach is the following. "A rights-based approach deliberately and explicitly focuses on people achieving the minimum conditions for living with dignity (i.e., achieving their human rights). It does so by exposing the roots of vulnerability and marginalisation and expanding the range of responses. It empowers people to claim and exercise and fulfil their responsibilities. A rights-based approach recognises poor, displaced and war-affected people as having inherent rights essential to livelihood security — rights that are validated by international law."

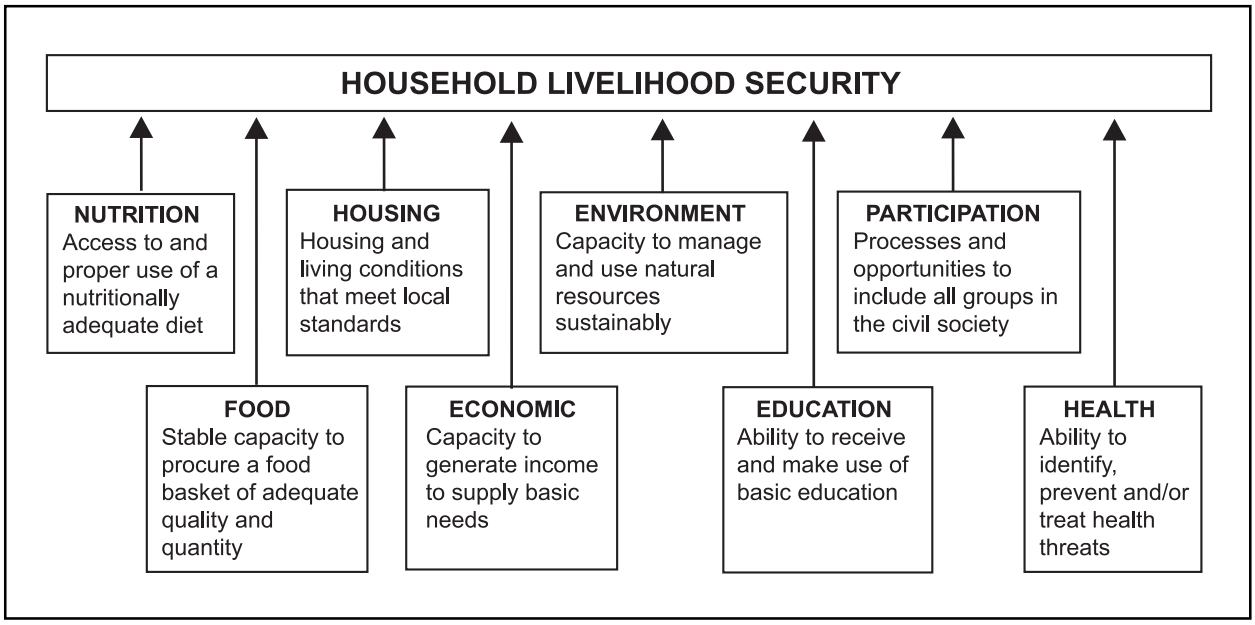
This HLS model is people-centred —it seeks to understand the needs of vulnerable people and how those needs are met in order to improve livelihoods. Households are the basic social and economic units through which resources are organised and allocated to meet the basic needs (or rights) of their members. Improvements to HLS can be made through interventions operating at various levels —at individual or community level through improved access to income, resources or services; at regional level through improved access to markets, employment and services; and at national and international levels through improved policy changes that affect the poor. But the HLS framework considers the household as the ultimate unit for problem analysis and impact measurement.

In practical terms, putting into operation an HLS programming framework means:

Promoting an integrated holistic approach: The over-arching theme of the HLS framework is that multi-sectoral, integrated programming is an effective way to address the inter-related factors constraining the livelihood security of vulnerable households. In order to address these factors, they should not be considered in isolation of each other. The HLS framework presumes that more integrated programming will create a positive synergy, and result in greater impact than the sum of the parts of a single-sector intervention.

For example, if households derive their income from farm and off-farm activities, a project that provides credit to an off-farm enterprise can positively impact another project that increases access to agricultural extension. Some of the enterprise's profits will be used to purchase improved seed varieties demonstrated by the project. The combined interventions can achieve cumulative benefits greater than they would alone. The net difference can be called the synergistic benefits.

Developing strong sectoral programmes: Integrated, multi-sectoral programming should not be a resurrection of past integrated rural development programming, which often featured a cadre of staff struggling unsuccessfully to implement a range of activities across several sectors. An HLS approach to programming is founded on strong, sector-specific interventions. Implementation in the absence of sectoral expertise will at best achieve mediocre results. In designing an HLS programme, all sectors must be assessed, as poverty is the result of a number of inter-related problems. Once the leverage points are identified, the sectors tied to these key areas are the areas where programming should begin.



Allowing operational flexibility: The HLS framework is not a recipe for programming but a guiding principle, the concepts of which can be applied in various contexts. The HLS framework is applicable to both new and existing projects. For existing projects, analysis from a wider perspective can help detect whether a critical element has been overlooked, reducing overall impact. It can then be determined if the missing element can be added by modifying the existing project, collaborating with another CARE project, or partnering with an external agency with comparative advantage complementary to CARE.

Within CARE, the way that HLS is operationalised varies from country to country, programme to programme. What suits one Country Office may not suit another. The variables influencing how the HLS framework is operationalised include:

- Number of sectors
- Nature of sectors (e.g., health, education, income, agriculture, etc.)
- Resources available (e.g., funds, staff, etc.)
- Presence and expertise of other players (e.g., government, NGOs, community-based organisations)
- Geographical location of current projects, and areas of interest or need
- Emergency verses development context (i.e., location of the target community or programme along the relief-development continuum)

CARE Zimbabwe and HLS

CARE Zimbabwe has moved from a programme made up of a dispersed set of generally stand-alone projects to one based on an overall HLS approach. This means seeing the impact of projects implemented in the same geographical area as greater than the sum of the parts —where different sectoral approaches take place, how they both independently and collectively improve people's lives. Over the past few years, this refined vision and programme strategy has been operationalised in rural areas where CARE is involved in direct delivery initiatives in ANR, Health and SEAD sectors. The reorientation of CARE's programme within an HLS framework is a result of strategic directions identified in the Long Range Strategic Plan formulated in August 1999. Adoption of an overall livelihoods approach has supported the following two strategic directions:

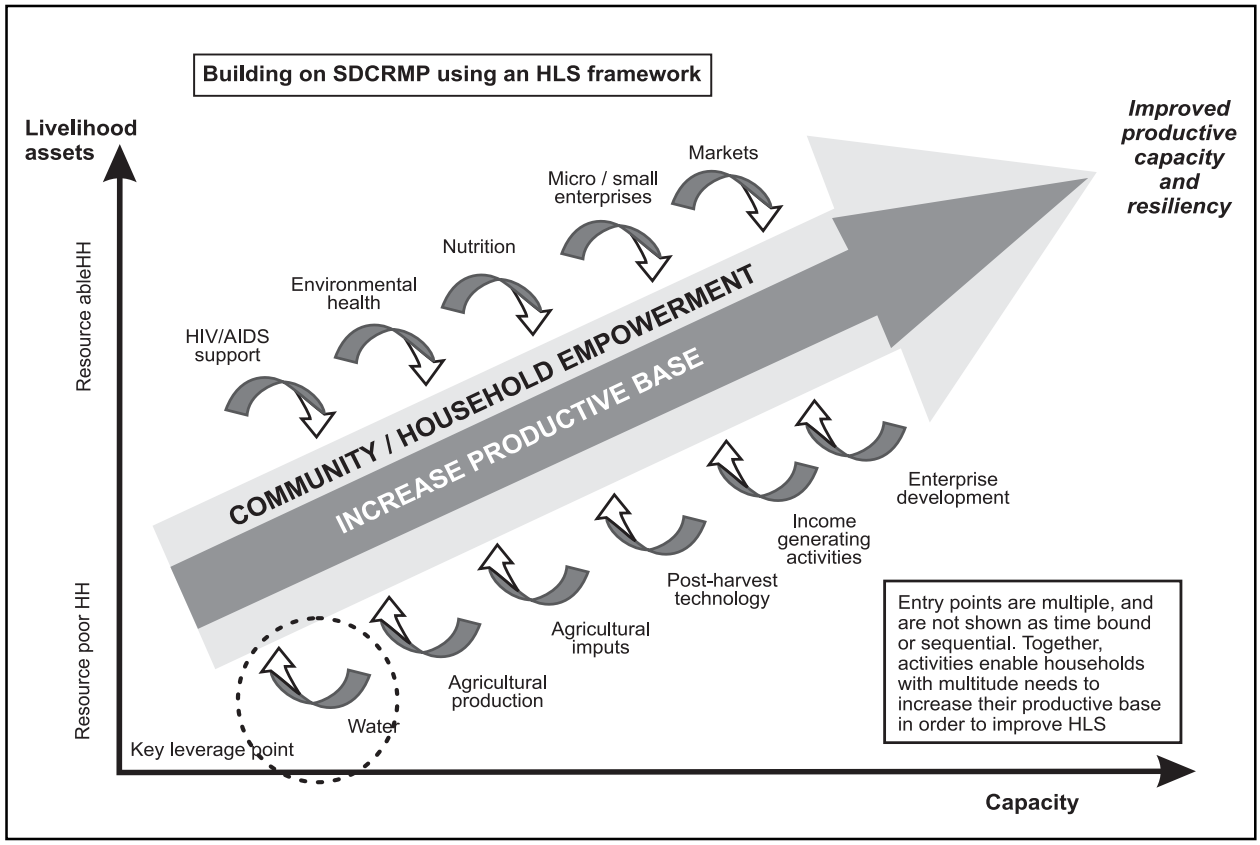
- Demonstrate impact through innovative, high-quality programming
- Develop and operationalise an integrated (synergistic) programming approach

As a first step in this process, CARE Zimbabwe carried out a participatory household livelihood assessment (HLA) in four rural communities in Midlands and Masvingo provinces (see HLA Process Report and Synthesis Report for further information). Through these assessments, selected staff learned about CARE's HLS framework, investigated new programming opportunities, and explored links between on-going interventions, both in terms of implementation and monitoring and evaluation. The result of the HLA process was the development and subsequent

Now two years into operationalising the HLS framework, staff directly involved in the process in 15 target communities are unanimous in their support of a livelihoods approach and the added benefits it can bring communities. However, the transition to an HLS approach from a sectorally independent approach was not easy. Commitment from all staff members, particularly at senior level, is critical for a more integrated approach to succeed.

funding of an HLS project in Midlands and Masvingo provinces, integrating relevant interventions from on-going ANR, Health and SEAD sector activities[3] (see Section 1).

CARE's HLS approach is still evolving and this document is not intended as a definitive guide to implementing an HLS programme. It is more instructive as a sharing of experiences from a Country Office adopting an HLS orientation, and how a development platform for an HLS programme is established through a specific leverage point. It has long been recognised in CARE Zimbabwe's work in chronically vulnerable, semi-arid areas that the year-round availability of water is critical to improving productivity in semi-arid areas. Thus, optimising productive water points (i.e., small dams) is seen as the critical leverage point from which to improve livelihoods in these areas. Though the SDCRMP originally began as an ANR intervention, activities are now implemented in collaboration with complementary programmes in other sectors. In a concerted effort to maintain coherence and sectoral expertise, complementary technical components in SEAD and Health are designed to build on the foundations established by the SDCRMP, yet at the same time be sectorally sound and achieve effects independently.



[3] Known as the Community-based Food Security Programme (CFSP), this HLS project aims to increase agricultural production and economic opportunities for rural poor residing in drought-prone regions in Mberengwa, Zvishavane and Shurugwi Districts. Using small dam rehabilitation as a development platform, the project is being implemented in tandem with four other CARE Zimbabwe initiatives, each addressing a key constraint to food and livelihood security.

EMPOWERMENT

The principle of "empowerment" describes CARE Zimbabwe's philosophy of working with programme targets, namely communities and households, and the importance of strengthening human capital to improve HLS.

Key Concepts of Empowerment

The use of terms such as human and social capital has grown in popularity over the past few years as development thinkers have shifted their emphasis from an exclusive focus on resources and income to the social dimensions of poverty and development. Social and human capital are now seen as the most important resources to consider in projects with a strong livelihoods approach, and yet both are rather amorphous —they do not lend themselves easily either to simple definitions or quantitative measurements. The challenge for CARE has been to stop defining projects only as interventions and to fully embrace the participation of individuals and organisations. This does not mean embracing all problems and needs, but considering all aspects of people's lives, and developing a mutual understanding with them of the linkages in their own lives. Understanding these linkages is an essential pre-condition for empowerment, and it is only with empowerment that social and human capital can be increased.

One of the key elements of CARE's HLS framework is that it emphasises a capacity-building and empowerment approach to development, and even relief activities (Drinkwater and Rusinow, 1999). Empowerment refers to the ability of people, in particular the least privileged, to: (1) have access to productive resources that enable them to increase earnings and nutritional status, and obtain the goods and services they require; and, (2) actively participate in the development process, policies and decisions that affect them. Capacity building refers to the specific skills (e.g., business, technical, management) necessary to improve productive abilities. Both social and personal empowerment is needed.

Social empowerment: This involves the establishment and/or strengthening of existing representative community-based organisations (CBOs) and other formal and informal networks. In some cases, it may require more basic community mobilisation, particularly in areas with a weak or newly emerging civil society. The aim in both cases is twofold. First, to build the capacity of community members to plan and implement priority development activities which emerge from participatory needs assessments, and in so doing, second, to provide communities with the means to develop their own principles and structures of democratic representation and governance. In this way, arenas are developed for those people often disempowered in traditional forms of village governance —women, youth, the poor— to voice their needs and concerns and demonstrate how their increased voice may bring more widespread social and economic benefits.

Personal empowerment: For the poorest members of a community, improving their democratic voice may address the issue of their exclusion from decision-making arenas, but in itself may be insufficient to improve their level of livelihood security. They suffer from a lack of productive resources, low economic returns from the production and income activities they undertake, and increasingly a collapse of informal social networks and safety nets. At this level, empowerment strives to help families develop the confidence and skills necessary to improve household assets and production activities. For programmes to be effective in improving the livelihood outcomes of vulnerable households, the most sustainable strategy is to empower and strengthen the asset that is the key to maximising the potential of all other resources, the human capital.

CARE Zimbabwe and Empowerment

CARE uses the Participatory Extension Approach (PEA) in both community and individual-level training. Developed and piloted in Zimbabwe in the mid-1990s, PEA is an extension approach and concept which transforms the way field workers interact with communities. Community-based extension and joint learning is central to PEA. PEA recognises farmers as equal partners, as the prime movers of their own development, as people capable of analysing and understanding problems, identifying solutions, and planning, implementing and reflecting on progress. A variety of extension methods and tools (including Participatory Rural Appraisal [PRA] and HLA tools) are used throughout the extension process of the SDCRMP (see the Community Resources Training Manual).

Using improvements to the productive base as entry points for a variety of sectorally-based interventions, CARE Zimbabwe's approach seeks to better equip and organise communities and households to respond to whatever needs or rights they define as priorities during and post-project. CARE programmes, including the SDCRMP, use a number of methods.

At the community level, activities are carried out using CARE's Community (Resources) Management Approach (CMA) mainly through the transferring of management and technical skills to elected representative CBOs and selected community members. The objective of this approach is to establish community management of communal resources as a sustainable means for promoting economic development while also enhancing awareness in regard to the protection and conservation of environmental resources. It is an approach that encompasses the principles of community-based natural resource management. The CMA is cost effective and promotes capacity building and sustainability of project outputs and results, due in large measure to direct involvement of communities, households and women's groups in decision making related to goals, outputs and impact.

At the individual level, activities encourage the formation of mutual support and interest groups, and assist these groups in identifying the key constraints inhibiting productive activities and strategies for improvement. People's interpersonal, business and decision-making skills are improved to help them to initiate activities. This may include working with the groups to commence savings activities, to improve existing or identify new income generating activities, or to use different agricultural methods that improve production. Supporting individual and group capacity ultimately supports community structures as well. Each level feeds into the other; without capacity building and empowerment of individuals, groups will not succeed, while strong groups feed their voice back to the community.

PARTNERING

The principle of "partnering" explains how CARE achieves programme goals, and improves service delivery, particularly with respect to addressing the multiple constraints to HLS that are often outside the focus of a single intervention or organisation.

Partnering Concepts

In recent years, organisations working in development have loosely applied the term "partner" to describe many kinds of inter-institutional collaboration, often using the word to put a positive spin on one-sided or hierarchical relationships. This has led to much ambiguity about what partnership really means. For CARE, a partnership is a relationship that results from putting into practice a set of principles that create trust and mutual accountability. Partnerships are based on shared vision, values, objectives, risk, benefit, control, and learning as well as joint contribution of resources. The degree of inter-dependence is unique to each relationship, depends on context, and evolves over time.

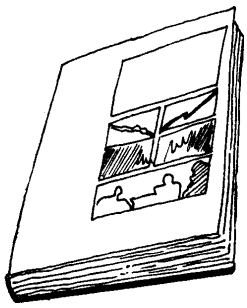
CARE uses different types of collaborative structures to achieve its mission. These can include sub-contract, sub-grant, joint venture, consortium, and network. Some of these structures facilitate the use of partnering principles more than others do, but it is the degree to which partnering principles are used, not the nature of the structure chosen, that determines whether the relationship can be called a partnership. Partnership principles may be used or not used in any of these structures. There are many degrees of "partnership", just as there are many degrees of "friendship". The relationship must be appropriate, and mutually satisfying in order to be effective.

CARE Zimbabwe and Partnerships

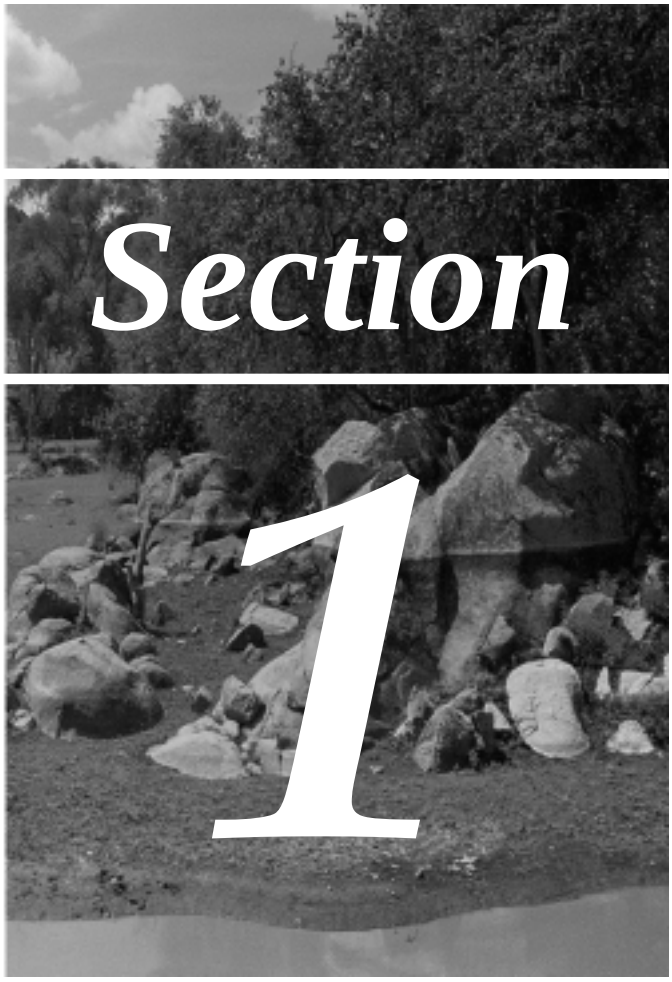
In order to better improve its service delivery, CARE Zimbabwe works with a number of different types of organisations and agencies in the implementation of the SDCRMP. These include government agencies, research institutes and universities, CBOs, NGOs, contractors and other private sector companies. These relationships include both formal and informal structures, ranging from direct sub-contracting arrangements, to working relationships, to informal networking with like-minded institutions. In every formal partnership, be it with communities, government, research institutions, or others, CARE has found it useful to establish Memoranda of Understanding (MOU), to define roles and responsibilities and help avoid confusion later, particularly if personalities change within the partnering institutions.

Because CARE eventually exits a community, the issue of continuity and sustainability in terms of post-project service provision is critically important. Therefore, a great deal of emphasis is placed on empowering the community to actively seek and demand the support they need. The intention of the partnerships that CARE develops is not only to help achieve project outputs, but also to create linkages between the communities and various support agencies. As part of this empowerment process, CARE does not become that link but facilitates a link that will continue after CARE exits.

For further background and overview information, please see:



- *CARE Zimbabwe. Country Office Profile and Small Dams Rehabilitation Programme handout*
- *CARE Zimbabwe. Household Livelihood Assessment Synthesis and Process Documents*
- *CARE Zimbabwe. ANR Goal and Strategy*
- *Central Statistical Office (CSO). Census 1992, Provincial Profile (Midlands, Masvingo)*
- *Drinkwater and Rusinow. Application of CARE's Livelihoods Approach*
- *Frost and Mandondo. Improving Rural Livelihoods in Semi-arid Regions through Management of Micro-catchments*
- *Lovell. Water Points in Dryland Areas*



Section 1

SECTION 1 PROGRAMME DESIGN

OBJECTIVE

To design a focused intervention that ultimately aims to improve household livelihood security, based on a clear understanding of the environment, constraints and needs of communities where activities are proposed.

STEPS

1. Holistic Analysis
2. Synthesis
3. Focused Strategy
4. Coherent Information Systems
5. Reflective Practice

SUMMARY OF THE PROCESS

CARE's HLS framework centres programming on household-level impact (regardless of the level at which the intervention occurs) and requires holistic understanding of livelihoods, yielding interventions intended to have the greatest leverage effect on improving poor households' livelihood security. Thus, the design of any livelihoods-based programme (whether multi or single-sector in nature) must follow a process that includes holistic analysis and synthesis of information, development of a focused strategy, and use of coherent information systems and reflective practice. This type of analysis, design and evaluation helps better understand the roots of vulnerability and poverty as well as the political and social dynamics at play in target communities.

In the past, SDCRMP was designed using traditional, single-sector approaches. However, as CARE Zimbabwe's programme orientation changed, a new phase of this programme needed to be designed to reflect an HLS approach. This section describes the design process used, but the integrated programme that emerged from this process has yet to be implemented, except through creating linkages amongst CARE's existing projects. The remaining sections of the guidelines discuss more specifically the methods used in implementing a particular intervention within this livelihood-based programme, namely the development and management of a productive water point as a platform for other livelihood improvements.

SECTION 1 DETAILED OVERVIEW

Step 1 Holistic analysis
Conduct a situation analysis
Begin the problem analysis

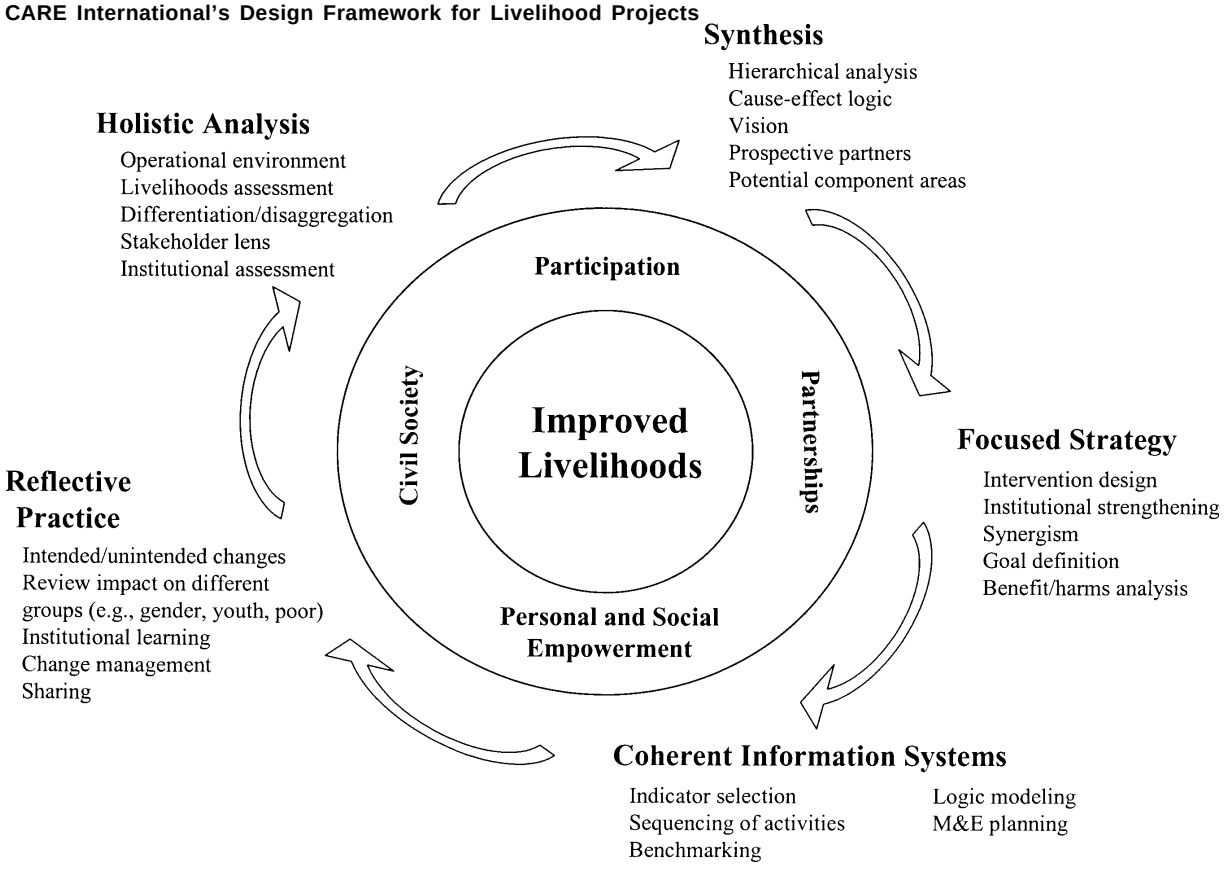
Step 2 Synthesis
Complete the problem analysis
Identify intervention areas

Step 3 Focused strategy
Design intervention(s)
Critically analyse programme design
Develop the logical framework

Step 4 Coherent information systems
Develop a monitoring and evaluation plan

Step 5 Reflective practice

CARE International's Design Framework for Livelihood Projects



HOLISTIC ANALYSIS

Holistic analysis shows a multi-dimensional view of livelihoods, which allows for the identification of the most vulnerable households and the placing of people's needs and priorities at the centre of the analytical and planning process. Vulnerability and marginalsation, community power relations, and policy and institutional systems are better understood and considered through this process.

Once project implementation has begun, holistic analysis also provides an in-depth understanding and baseline of target communities, and a starting point for community mobilisation (see Section 3).

CONDUCT A SITUATION ANALYSIS

The purpose of the situation analysis is to ensure the relevance of the programme in the target area. Ultimately, this analysis helps to frame the key themes and trends affecting household livelihoods and develop strategies to address HLS. This process involves the following activities:

Reviewing secondary data: A comprehensive review of secondary information is done to provide target area (e.g., district-level) baseline profiles and to investigate what information on livelihood indicators is available. Typical sources include existing surveys, research studies, programme reports, etc. of stakeholders who have been active in either the sector or the target area.

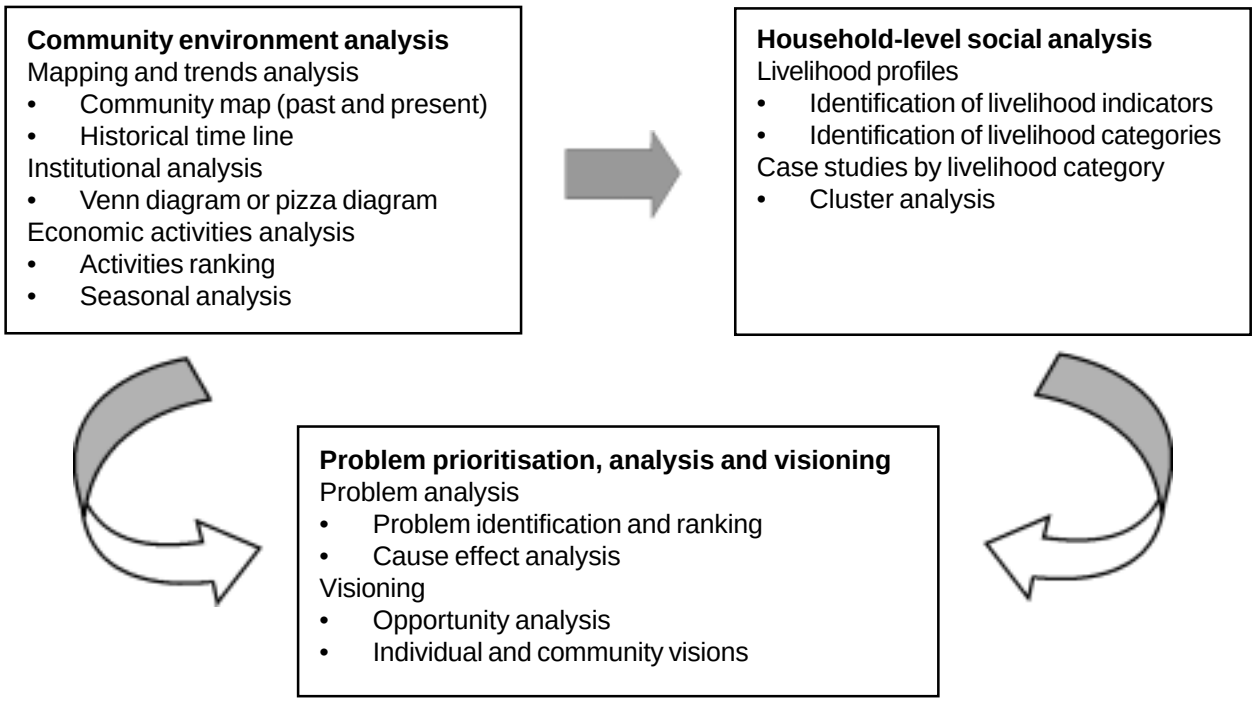
CARE collected secondary data for the following livelihood indicators: food, nutritional, health, economic, educational, environmental, and social network security. Information gaps identified were incorporated into baseline studies (see Section 13).

Updating primary data: Understanding the operating environment is critical in a comprehensive situation analysis. The operating environment includes the elements that define the context for a programme and which can have a positive or negative effect on its success. These elements include:

- People (numbers, relationships, ages and gender)
- Environment (vegetation, climate, resources)
- Infrastructure (roads, schools, hospitals, water and sanitation)
- Human and material resources (education level, labour)
- Beliefs and practices (religious, cultural, political, social)
- Economics (wealth, distribution, sources)
- Institutions (governments, donors, NGOs, research, churches)

Holding discussions with stakeholders: A series of discussions with a wide range of stakeholders (e.g., donors, government, NGOs, research institutions, social groups such as farmers and churches, etc.) are held on community development issues and approaches being used. The purpose of these discussions, held at district, provincial and national levels, are to assess the development and research priorities of other key stakeholders, and lay the groundwork for potential partnerships.

Undertaking a Household Livelihood Assessment (HLA): After available information is collected, a field-based HLA is done in representative communities to identify some of the critical constraints to HLS and needs in the target area. The objectives of the HLA are multiple. It helps orient staff to the HLS framework, and builds skills in livelihood analysis. The HLA also develops a deeper understanding of livelihood strategies and household-community linkages that can inform programme design. In the case of CARE Zimbabwe, the HLA was also used to examine the relevance and gaps of the current programme, to identify potential new opportunities, and to compare household conditions in communities where CARE has had a greater or lesser role in implementation. Following completion of the HLA, a synthesis report is compiled to assimilate the information collected for discussion.



Following the distribution of CARE's HLA Synthesis Report, a follow-up workshop was held to validate findings with key programme staff and to agree on the logic of the problem analysis. The primary trends identified during this process included:

- *Lack of community-based organisations*
- *Confused role of traditional and government authority*
- *Dependence on natural resources*
- *Lack of water, labour, livestock and agricultural inputs*
- *Undeveloped marketing systems*
- *Impact of HIV/AIDS*
- *Chronic food insecurity and malnutrition*

BEGIN THE PROBLEM ANALYSIS

The problem analysis brings to light major issues or concerns within the operating environment. These do not exist in a vacuum, but within a system, whether educational, social, political, familial, governmental or economic. Any factor that affects one part of the system also interacts with other parts of the system. The HLS framework promotes the concept of a system and helps to break away from common single-sector analysis of problems.

During the problem analysis, the different concerns identified in a community are organised into a logical hierarchy of cause-and-effect relationships. A logical cause-effect stream is established that illustrates *to the best of our ability* the relationships between behaviours, conditions and problems. Problem trees visually represent the various causal streams that contribute to a problem. If the problem is the trunk of the tree then the causal streams are the branches or roots. Frequently, consequences are also added as either branches or roots. Using such a tool, the analysis discovers and inter-relates factors that lead to a problem, and brings programme designers and evaluators closer to identifying the real needs of target populations.

Problem trees developed during CARE's HLA exercise helped identify critical constraints and leverage points from which to build a holistic programme. Final problem trees (consolidated in Annex 1.1) shared a food security theme and identified malnutrition as the ultimate condition stemming from problems associated with agricultural production, income and health concerns. Each problem stream was analysed in an effort to justify and reach consensus on the way forward for CARE Zimbabwe, by considering current programming opportunities and gaps compared to the constraints faced by rural households in improving HLS.

Community Problems Captured in CARE Zimbabwe Programmes	***Programming Gaps***
Malnutrition *Low income and unemployment (income generating projects, financial services, credit and savings)* *Health education* *Nutritional intake* *Land reform (land availability)* *Lack of implements* *Access to agricultural inputs* *Limited knowledge of agricultural practices, including sustainable farming techniques* *Low yields (improving yields through high-tech systems)* *Access to extension services* *Improved water supply*	*Orphans* *Lack of draught power (cattle mortality, dip tanks)* *Early marriage* *Limited access to family planning* *HIV/AIDS/STD prevention* *Home-based care* *Government health services* *Low education* *Vocational skills (youth)* *Off-farm employment (formal jobs)* *Output marketing and distribution* *Diversifying farming systems* *Targeting vulnerable groups*

SYNTHESIS

Once problem trees are completed, the relative contributions of causes are explored and assessed for their potential for achieving impact and improving livelihoods. Areas of greatest leverage or potential impact translate into programming opportunities, through CARE and/or partner activities. Synthesis also seeks to recognise those most affected by discrimination, exploitation, and neglect and the inter-related roots of their predicaments, and how they can be targeted.

COMPLETE THE PROBLEM ANALYSIS

The selection of specific issues to be addressed from the problem analysis can be difficult. Because there is a lack of purely quantitative methods for doing this, choices can be based on several criteria. A programme or project with a good chance of success should:

- Make a significant contribution to the problem
- Respond to community, government and donor priorities
- Have high synergy or leverage
- Reflect the institution's comparative advantage, or be achievable through partnerships

CARE Zimbabwe staff held a 2-day Synthesis Workshop to: (1) review and confirm findings from the holistic analysis; (2) look more closely at cause-effect relationships emerging from the problem tree, and; (3) identify key leverage points and synergistic programme relationships (see CARE's HLA Synthesis Report).The workshop was attended by senior management and field staff from all sectors. Recommendations on improving HLS emerged, based on the themes identified by the communities, and provided direction for a more integrated programme portfolio. In some cases, the findings of the holistic analysis emphasised the importance of CARE's current interventions. In other cases, new intervention areas were identified to strengthen the programme.

CARE's team identified principles to be considered as part of any intervention. These principles, for both new and existing projects, included:

- *HLAs should be used at project initiation and set-the stage for every intervention*
- *Impact should be measurable at the household level, and M&E systems should be developed to measure changes in livelihoods*
- *Interventions should be purposefully sequenced, with productive water points used as entry points wherever possible*
- *Strategic partnerships should be developed with outside agencies when CARE does not have the capacity or mandate to intervene*
- *Community empowerment and capacity should increase as part of any intervention*

DEVELOP INTERVENTION AREAS

After deciding which issues to address, intervention areas are developed. Interventions are typically targeted to influence human behaviour in a positive manner, or to introduce or improve essential systems. Interventions may include policy changes, extension education, procurement and provisioning of resources such as seeds and tools, training, organisation, and employment generation.

A brainstorming session is used to develop a full list of alternatives. The team should be as creative and open as possible. Ideas may come from several sources including best practices, lessons learned from previous projects, individual and institutional experiences, inputs from communities on desired solutions, or ideas from review of research literature. There will likely be a variety of intervention options for any given issue.

The design team (either a multi or single-sector team) examines these options and makes a selection. The selection process can be as simple as arriving at team consensus or as complicated as applying prioritisation tools to choose. The value of using one of these tools is that a written record is maintained of how the decision was arrived at. In addition, the risk of one individual dominating the decision-making process is diminished. Regardless of how a team arrives at their choices, it is important that selection criteria be developed. Each team is responsible for developing its own criteria; however, common criteria exist to guide intervention selection including cost-effectiveness, social acceptability, required management support, community support, sustainability, technical feasibility, and political sensitivity.

Care should be taken to ensure the best option is chosen given the local context (as identified during the holistic analysis) and resources available. The objective is to identify activities that best meet community needs.

FOCUSED STRATEGY

From the analysis done so far, a focused strategy is developed. The needs addressed in project activities should be those which deal with the priority concerns of households and build upon the positive experiences and traditional coping mechanisms they have evolved. Incorporation of a rights-based approach in the design process helps highlight the importance of investing in local participation and empowerment, how best to encourage dialogue on rights, responsibilities and power relations, and how to positively involve all segments of the population.

DESIGN INTERVENTION(S)

A frequent misconception concerning the HLS framework is that holistic analysis must lead to holistic or multi-sectoral projects. Although projects with a strong livelihoods approach may address three of four different issues or "lines of action", applying a livelihoods approach does not prevent projects from also being largely sectoral in nature. However, when focusing more on sectoral initiatives, a holistic perspective should still be used in the design to ensure that cross-sectoral linkages are taken into account, and that partnerships are made to achieve mutual complementarities where appropriate.

In many countries, an agricultural production intervention will have little impact on the livelihoods of poor households without complementary activities looking at the development of market linkages, micro-finance, and even off-farm income sources. In these situations, rather than one organisation tackling all components, it may make better sense to establish an appropriate framework for different partners to work successfully together. The same can even be said for different sectors within the same organisation.

For CARE, an important part of any intervention design is the inclusion of an exit strategy (see Section 3). All programmes are designed with sustainability in mind, and specifically addressing ways for successfully exiting from a community is needed at this stage. One of the ways CARE does this is through community and individual empowerment and capacity building.

CRITICALLY ANALYSE PROGRAMME DESIGN

Over the years CARE International has developed specific tools to help assist in analysing anticipated targets, intended benefits, potential harms, etc. from implementing a project or using a specific type of methodology. Two such tools, the Benefit-Harms Handbook and the ANR Standards Assessment Tools, can be used throughout implementation but perhaps most importantly in analysing programme design.

DEVELOP THE LOGICAL FRAMEWORK

During the development of a focused intervention strategy, it is useful (and required by most donors) to also develop the Logical Framework Analysis (LFA). The LFA is simply a tool used to articulate objectives and layout activities in a coherent way. The following hierarchy and terminology is commonly used by CARE:

- Goal (impact): sustainable improvements in human conditions or well-being
- Objectives (effects): changes in behaviours or improvements in access to or quality of resources
- Outputs: specific products of activities
- Activities: processes implemented by the project
- Inputs: resources needed (e.g., funds, personnel, materials, equipment)

The LFA also includes appropriate indicators to measure completion or success at each level. Choosing indicators helps determine if goals, objectives or outputs are too vague, difficult to measure, or impossible to achieve. Indicators should be SMART: specific, measurable, achievable, realistic, and time bound.

CARE conducted a separate Design Workshop to develop programme interventions. Staff from all sectors reviewed intervention areas identified during the Synthesis Workshop and looked more specifically at how cross-sectoral linkages would take place, and how programming gaps would be filled. This multi-sectoral team developed the overall goal and core objectives, and sectoral experts later articulated outputs and activities (see Annex 1.2). Senior managers used CARE's Benefits-Harms Handbook to refine the design and rationalise justification or alter certain types of activities and how they would be implemented.

COHERENT INFORMATION SYSTEMS

Time and resources need to be made available from the design stage to consider necessary information systems, particularly for monitoring the progress and effects of activities, and communicating information between interventions.

DEVELOP A MONITORING AND EVALUATION PLAN

A coherent information system requires a plan that details steps for monitoring and evaluating baseline, project and post-project conditions and activities.

Although monitoring and evaluation are sometimes not distinctly separate activities, some general definitions do apply. Monitoring is done more regularly, ensuring activities are done, work is heading in the right direction, and changes are taking place. It tends to look at individual parts of the project as it proceeds. Monitoring is not simply a data collection exercise; data should be analysed and used to track progress, identify weaknesses and take action in decision making. Monitoring feeds into evaluation. Evaluation takes more of an overview of the whole project and defines to what extent objectives have been fulfilled, and how or why they have fallen short. Evaluation also tries to assess if there have been any unforeseen consequences of the intervention. While monitoring takes place from the onset of the project, evaluation takes place only after enough time has passed for changes to happen. The coherent information systems (monitoring and evaluation) are essential for reflective practice (see Step 5).

The foundation of the monitoring and evaluation plan is the logical framework document. LFAs summarise key information from the programme design —goals, objectives, outputs and activities— including indicators for measuring completion and success at each level. Generally, the LFA outlines in broad strokes the overall M&E plan. Specific information on data necessary to measure indicators, data collection frequency, persons responsible, broad guidelines for analysis of data and interpretation and dissemination of results are assimilated into a detailed M&E plan initiated during the project implementation phase (see Annex 1.3).

Within a rights-based orientation, inclusion, participation and empowerment become essential programme objectives, not only for their potential to enhance impact on food, health, and educational security, but also in their own right. The HLS framework requires that household-level impact of programmes be understood. This is harder to do with livelihood programmes than it is for standard service delivery projects. It is important to develop intermediate and community-level measures and indicators for tracking these less tangible, and longer-term changes at the local level.

The specific tools and examples used in the SDCRMP are described in more detail in Section 13.

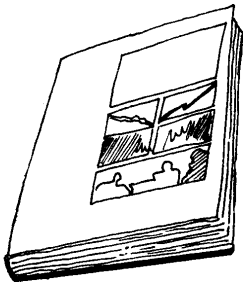
REFLECTIVE PRACTICE

The aim of developing a complete monitoring and evaluation plan is not simply to collect information, but to use this information to improve programme design and implementation.

Linked very closely to having a coherent information system is reflective practice. Reflective practice within the HLS framework is evaluatory in nature and looks at the intended and unintended changes brought on by the project or programme, the impact on different groups (e.g., youth, poor etc.), institutional learning, etc. Assessments and evaluations should be on-going both during and post-project. A great deal can be learned by looking at one's own effort as well as taking a wider perspective.

Reflective practice has been an on-going process at CARE Zimbabwe over the past 5 years, even before transition to an HLS framework. Literature reviews and lesson learned workshops are used to reflect on project successes and weaknesses. The annual Long Range Strategic Planning process provides an opportunity to reflect on overall programme success. Since moving towards a more integrated, livelihoods approach, CARE has facilitated annual workshops to review progress, share experiences, discuss problems, and create linkages between sectors. Monitoring and evaluation plans have been developed for most projects. The challenge now is to ensure the most useful information is collected, is not a burden to projects, and is used reflectively to improve implementation.

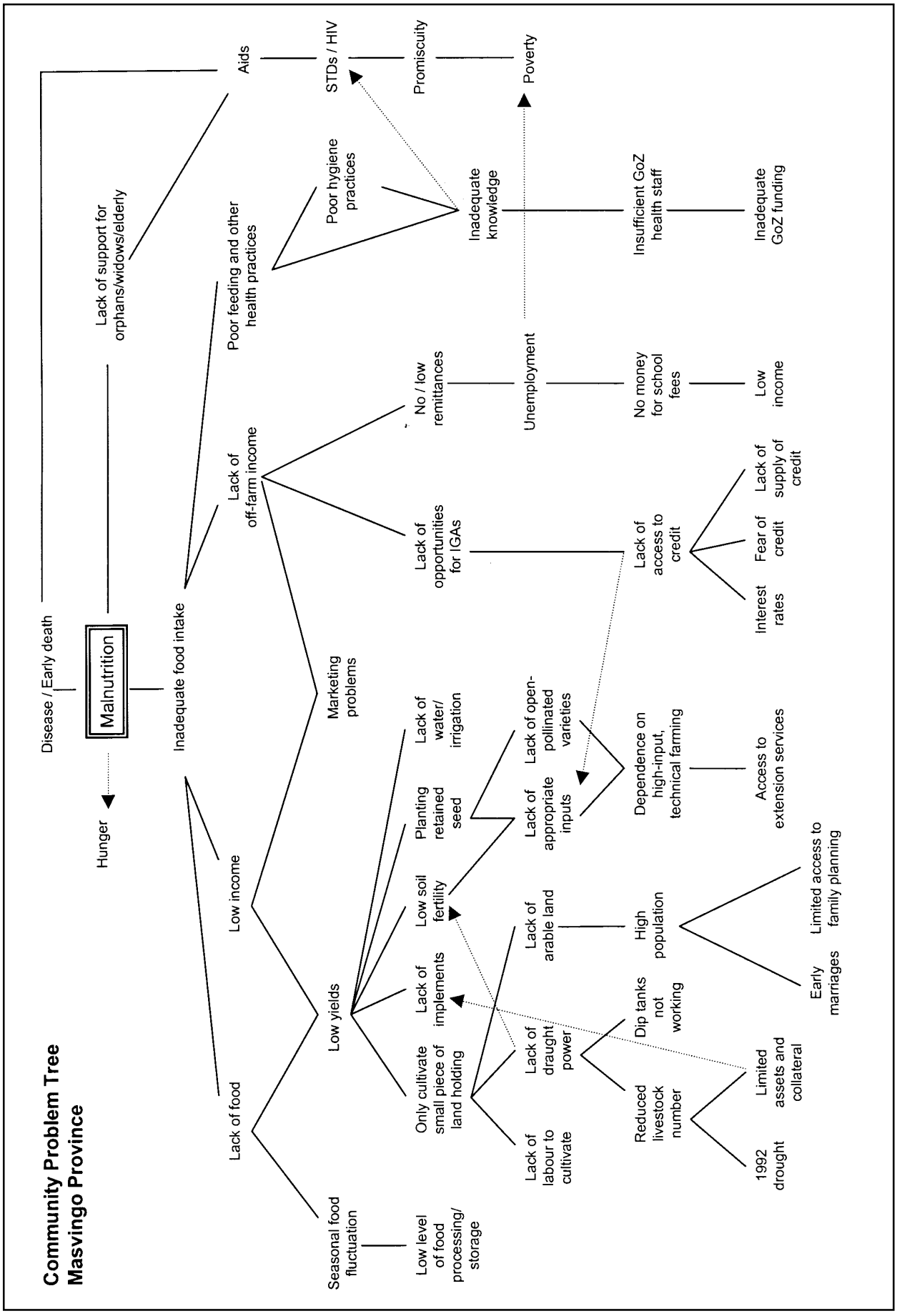
For further information related to programme design, please see:



- *CARE Zimbabwe. Household Livelihood Assessment Synthesis and Process Documents*
- *CARE Zimbabwe. Nhaka Yedu (Our Heritage): Protecting and Promoting Rural Livelihoods in Masvingo Province*
- *CARE International. Incorporation of a Rights-Based Approach into CARE's Program Cycle – A Discussion Paper for CARE's Program Staff*
- *CARE International. ANR Standards Assessment System*
- *Frankenberger et al. Operationalising Household Livelihood Security: A Holistic Approach for Addressing Poverty and Vulnerability*
- *Lovell. Water Points in Dryland Areas*

Section 1 Annex

Annex 1.1 Problem tree from CARE Zimbabwe's Household Livelihood Assessment



Annex 1.2 Example – Logical Framework Analysis for livelihoods programme

Project Name: ***Small Dam and Community Resources Management Programme (Household Livlihood Security Approach)***
Country: **Zimbabwe**
Date of Preparation: **August 2001** Design Team: CARE International in Zimbabwe

Narrative Summary	Objective Verifiable Indicators (OVIs)	Method of Verification	Assumptions
Goal:			
To protect the capacity of chronically vulnerable households in 200 communities to meet basic needs, and improve the resiliency of communities to shocks and stresses on a sustainable basis	• Sustainable improvement of household livelihood security and coping strategies (using indicators of food, nutritional, health, economic, educational, environmental and social security)	• Secondary data • Baseline assessment at household level • Final evaluation	• *Project interventions work together to achieve positive impact on household livelihood security.*
Purpose:			
To strengthen the capacity of households and communities to identify, prioritise and manage development need and rights	• Communities empowered to address constraints affecting their ability to control their livelihoods • Community-level structures plan, implement and manage resources and own initiatives • Increased participation by households in community activities • More diversified livelihood opportunities available to and used by households	• Baseline assessment at community level • Mid-term evaluation • Final evaluation	• *External environment does not lead to social breakdown.* • *Communities are able to participate and respond positively.* • *GoZ and other local agencies remain functional in rural areas.* • *Change can be measured during the project and attributed to outputs.*
Project Outputs			
1. Sustainable, productive water supplies and management systems developed	1.a At least one productive water point developed in each community supporting dry season gardening, livestock production, or other activities 1.b Dry season garden potential (e.g. irrigation, vlei, etc.) increased by an average of 50%, where appropriate 1.c Yields of crops grown at productive water points increased by 100% in each community, where appropriate 1.d Representative water point committees actively operating and maintaining each water point and water delivery systems	• Contractor reports • Project MIS • Crop production survey • WPC records • Pre/post training assessment • Sentinel HH monitoring • Annual evaluations	• *No major drought occurs that will affect development of productive water points.* • *No political or administrative interference impedes management of water points.*
2. Agro-ecologically appropriate and equitable farming/natural resource production and management systems enhanced	2.a Increased community awareness of optimal land use options, land degradation, drought preparedness, and environmental resources 2.b Range of soil and water conservation measures adopted and maintained by at least 30% of participating farmers 2.c Increased use of drought-tolerant crops for more reliable and small grain production, where appropriate 2.d Improved livestock production, management and access for resource poor farmers, where appropriate 2.e Sustainable use and management of natural resources (e.g., trees, wildlife), where appropriate	• Project MIS • Community plans • Participatory monitoring • Community research • Crop production survey • Agent sales records • Grazing scheme plans • Animal health records • Pre/post training assessment • Sentinel HH monitoring	• *Communities are interested in developing alternative production systems.* • *Interventions (e.g., conservation structures, crops, livestock opportunities, etc.) for the different types of households in a community are identified.*

	2.f Improved post-harvest infrastructure, systems and processing ability	• Annual evaluations	
3. Enterprise development opportunities and activities enhanced	3.a Increased awareness of savings, credit and IGA selection methodologies through Enterprise Groups 3.b At least 40% of Enterprise Group participants start non-agriculture and agriculture-based IGAs, with at least 25% of IGAs operating year round 3.c At least 50% of participating enterprises applying new technology and/or introducing new product to the market 3.d Increased sales of participating enterprises by 25%, with 10% of enterprises reaching new markets 3.e At least 2 product/commodity associations formed per district 3.f Increased net worth of participating enterprises by an average of 15% 3.g Improved employment opportunities in communities from participating enterprises	• Project MIS • Enterprise Group records • IGA records • Business records • Association records • Pre/post training assessment • Sentinel HH monitoring • Annual evaluations	• *Infrastructure allows the travel of participants.* • *Macro-economic indicators are favorable to economic growth.* • *There is a sufficient volume of MSEs in target communities.* • *Brokers and buyers are interested in expanding into markets in the rural areas.* • *Transportation costs allow MSEs to compete in higher value markets.*
4. Prevention and community support mechanisms for people affected by HIV/AIDS established	4.a Improved ASO capacity to deliver appropriate financial and non-financial services to HIV-affected households. 4.b Increased community-level communication and action related to HIV and AIDS 4.c Youth better understand reproductive health related issues	• ASO records • Community plans and monitoring • Pre/post training assessment • Sentinel HH monitoring • Annual evaluations	• *ASOs are committed to responding to the economic impact of HIV and AIDS, and are able to deliver services.* • *Communities are willing to invest time in meetings, and are willing to take action.* • *GoZ support the "Auntie Stella" approach with schools and out-of-school youth.*
5. Health communication and management improved	5.a Increased awareness of the causes, effects and solutions for environmental health and malnutrition problems 5.b Improved access to community water supply and sanitation facilities that are actively operated and maintained 5.c Direct promotion of the consumption of nutrient-rich foods 5.d Actions taken to address environmental health and malnutrition problems at community and household level	• Project MIS • WPC/volunteer records • Community plans • Crop production survey • Pre/post training assessment • Sentinel HH monitoring • Annual evaluations	• *Communities are willing to change poor practices and behaviours.* • *Households are willing and able to contribute to improving their water and sanitation facilities.* • *Communities are willing to try new varieties of local foods.*
6. Access to resources, inputs and services increased	6.a Stronger, community-driven partnerships with technical service providers (including government) 6.b Improved access and affordability of agri-inputs for farmers in three districts 6.c Maize fortification services available in at least 80% of communities 6.d At least 3 viable and functioning Enterprise Development Service Providers (EDSPs) in place, reaching at least 200 MSEs for more than one cycle of services 6.e Actions taken by communities, groups and/or households to source required resources, inputs or services	• Group records • Participatory monitoring • Agent records • Client assessment • Crop production survey • Millers' records • EDSP records • Community plans • Sentinel HH monitoring • Annual evaluations	• *Agri-input suppliers prepare to assume the risk.* • *There is sufficient market demand from farmers to support Agents.* • *Small-scale millers are willing to invest in providing fortification services.* • *GoZ continues support of fortification through guideline and policy development.* • *There is sufficient market demand from MSEs to support the costs of EDSPs, and for MSE products.*

Annex 1.3 Example – Exerpts from a Monitoring and Evaluation Plan for livelihoods programme

Monitoring and Evaluation Plan – Small Dam and Community Resource Management Programme (Household Livelihood Security Approach)

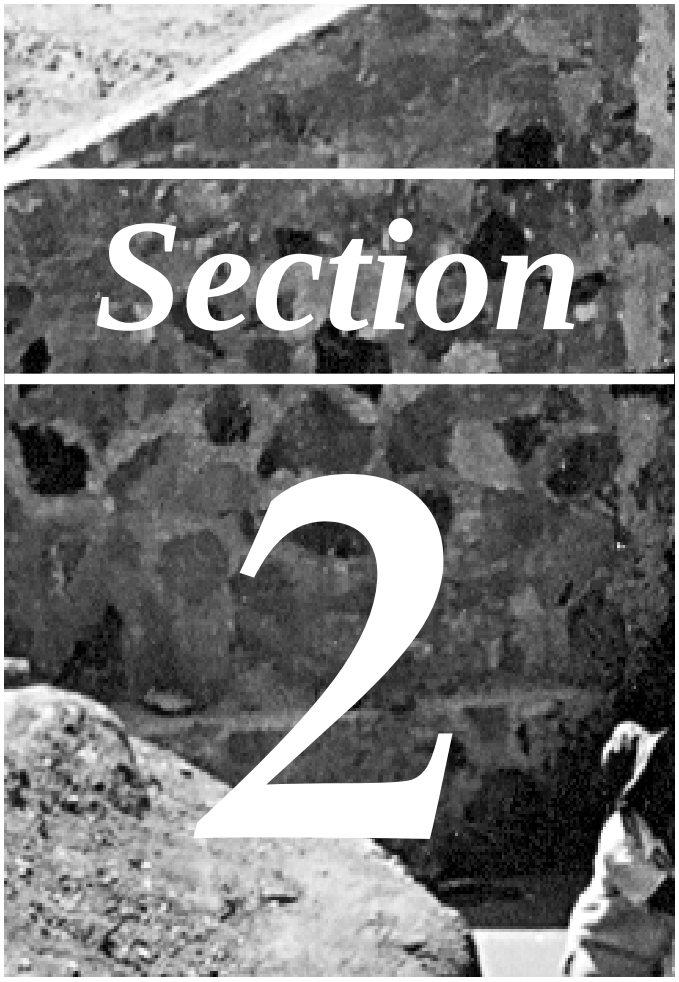
Project Purpose: To strengthen the capacity of households and communities to identify, prioritise and manage development need and rights

INDICATOR	Data Needed				Data Analysis		M & E	Frequency	Application	Circulation	How
	Data needed	Sources	Methods	Who	Type	Who					
Communities empowered to address constraints affecting their ability to control their livelihoods	• Community awareness of problems and solutions • Frequency and success with which community accesses outside services	Community Community Action Plan	PRA techniques and exercises Review and analysis	FO PM FO	Qualitative Quantitative Qualitative	FO PM FO PM	E M E	Baseline Mid-term Final Annually	To access the success and sustainability with which the community is directing its own development	SC/Project staff Other CARE Donor Local community	Baseline/ evaluation reports Progress reports Community maps Technical reports Feedback
Community-level structures plan, implement and manage resources (including common property resources) and own initiatives	• Number, variety and success of representative committees in place • Involvement of vulnerable HHs in community management • Frequency of conflicts	Community Committees Committee records	PRA techniques and exercises FGD KI Reviews	FO PM FO PM FO	Qualitative Quantitative Qualitative Quantitative	FO PM FO PM FO PM	E E M	Baseline Mid-term Final Annually Quarterly	To track progress made in the development of representative community institutions.	SC/Project staff Other CARE Donor Local community	Baseline/ evaluation reports Progress reports Feedback
Increased participation by households in community activities	• Level of involvement in and commitment of HHs to committees, groups, etc. • Frequency of new community-based activities initiated • Accessibility to community-owned and managed systems and services	Community Committees Sentinel HH	PRA techniques and exercises FGD KI FGD Case study	FO PM FO PM PM FO	Qualitative Quantitative Qualitative Qualitative	FO PM FO PM FO PM	E E M E	Baseline Mid-term Final Annually Annually	To determine the level of participation of households in community management, including vulnerable households	SC/Project staff Other CARE Donor Local community	Baseline/ evaluation reports Progress reports Feedback
More diversified livelihood opportunities available and used by households	• Dependency of HHs on dryland agriculture • Access to productive land or other productive resources • Marketing of crops • Access to IGAs and employment opportunities	Participating communities Sentinel HH	PRA techniques KI FGD Case study	FO PM FO PM	Quantitative Qualitative	FO PM FO PM	E M E	Baseline Mid-term Final Annually	To examine changes in the diversity of HH economy	SC/Project Staff Other CARE Donor Local Community	Baseline/ evaluation reports Progress reports Feedback

Output 1: Sustainable, productive water supplies and management systems developed

INDICATOR	Data Needed				Data Analysis		M & E	Frequency	Application	Circulation	How
	Data needed	Sources	Methods	Who	Type	Who					
At least one productive water point developed in each community supporting dry season gardening, livestock production, or other activities	• # productive water points developed • Number of communities	Project MIS Contractor reports	Review of records Review of reports	FO PM PM	Quantitative	FO PM FO PM	M M	Quarterly	To measure progress made in the provision of productive water points.	SC/Project staff Other CARE Donor Local community	Baseline/ evaluation reports Progress reports Feedback
Dry season garden potential (e.g. irrigation, vlei, etc) increased by an average of 50%, where appropriate, by project end	• # dry season gardens (before and after development of productive water points)	Project MIS Sentinel HH	PRA techniques KI FGD Case study	FO PM FO PM	Quantitative Qualitative	FO PM FO P	M M E	Quarterly Baseline Annually	To measure increases in dry season garden.	SC/Project staff Other CARE Donor Local community	Baseline/ evaluation reports Progress reports Feedback
Yields of crops grown at productive water points increased by 100% in each community, where appropriate by project end	• Annual yield levels per irrigated crop (before and after irrigation system installed)	Agricultural survey Crop production records Sentinel HH	Survey Review of records FGD Case study	FO PM PM FO FO PM	Quantitative Quantitative Qualitative	FO PM	E M M E	Baseline Final Quarterly Baseline Annually	To measure increases in agricultural production from irrigated gardens.	SC/Project staff Other CARE Donor Local community	Baseline/ evaluation reports Progress reports Feedback
Representative water point committees actively operating and maintaining each water point and water delivery systems	• # of water point committees established • # of women in committees	Water Point Committee Membership Register and records Pre/post training assessment	Review of records FGD KI	FO PM FO PM	Quantitative Qualitative	FO PM PM	M M E	Baseline Final Quarterly Annually	To track progress made in the development of representative community institutions.	SC/Project staff Other CARE Donor Local community	Baseline/ evaluation reports Progress reports Feedback

KEY: KI – Key Informant Interviews. FGD – Focus Group Discussion. FO – Field Officer. SC - Sector Co-ordinator. PM – Project Manager. M – Monitoring. E – Evaluation.


Section
2

PRE-IMPLEMENTATION

OBJECTIVE

To ensure a smooth start-up to implementation both internally by developing administration systems and staff structures, and externally by sharing programme information and establishing strong partner relationships.

STEPS

1. Hold Initial Planning Meeting
2. Form the Programme Team
3. Develop Support Systems
4. Develop or Revise Memorandum of Understanding
5. Create Linkages at National and Provincial Level
6. Create Linkages at District and Local Level
7. Begin Developing the Exit Strategy

SUMMARY OF THE PROCESS

Pre-implementation steps address both internal and external issues before activities begin. Internally, CARE must ensure that key administrative and financial systems are in place, initial procurements are made, and core staff are hired. Externally, CARE must develop relationships with partners, and sustainable systems for keeping them engaged.

Because only some partners may have been involved in programme design, and the time period between design and implementation is often long, it is important to formally engage all partners as soon as possible. Partners include government agencies, research institutions and universities, NGOs, CBOs, and the private sector. Partner relationships begin with sharing information and negotiating mutual roles and responsibilities.

CARE works at all levels (national, provincial and district), each having different issues. Provincial-level partners want to ensure the programme's objectives and activities generally support ministry policies. District-level partners want to know how programme activities affect extension officers' workload, whether transport is provided, and other practicalities. Support at higher levels helps encourage support at lower levels, but does not always guarantee it. CARE organises introductory meetings at provincial level, and inception workshops at district level. During implementation, CARE works within existing structures at both levels, through participation in Provincial and District Natural Resource Committees. In this way, programme activities are integrated into existing plans, actively involving government partners in decision making and reducing the risk of parallel programming.

To ensure continuity after CARE exits, the support of all relevant government agencies is especially important. The aim is to integrate the role of government education and extension into the community management process, so that it supports community needs.

DETAILED OVERVIEW

Step 1 Hold initial planning meeting
- Review programme design and contract compliance issues
- Identify priority administration needs
- Contact donor as needed
- Plan pre-implementation steps and timeline

Step 2 Form the programme team
- Develop team structure
- Recruit appropriate staff
- Train programme staff
- Regularly evaluate performance

Step 3 Develop support systems
- Set-up administrative systems
- Set-up financial systems
- Set-up human resource systems

Step 4 Develop or revise Memorandum of Understanding
- Disseminate information to all partners
- Draft or revise Memorandum of Understanding
- Finalise MOU and programme information document

Step 5 Create linkages at national and provincial level
- Contact partners
- Hold programme introductory meetings
- Maintain on-going involvement at provincial level

Step 6 Create linkages at district and local level
- Contact partners
- Hold programme inception workshops
- Maintain on-going involvement at district and local level

Step 7 Begin developing the exit strategy

HOLD INITIAL PLANNING MEETING

When the programme is approved for funding by the donor, CARE holds an in-house meeting to ensure efficient start-up. This meeting involves Country Office management staff (programme and administration), and is held immediately.

REVIEW PROGRAMME DESIGN AND CONTRACT COMPLIANCE ISSUES

The original design document, along with any changes required by the donor, is reviewed. Since it is sometimes a long period of time between programme design and funding approval, senior CARE programme staff review the design to determine if it is still relevant, if the operating environment has changed significantly, if development priorities are the same, etc.

Senior programme and administration staff also review the contract compliance requirements of the funding, such as financial tracking systems, procurement or hiring policies, reporting requirements, etc. It is important that the correct systems are in place from the start, to avoid problems during audits or evaluations.

IDENTIFY PRIORITY ADMINISTRATION NEEDS

Priority administrative activities should be identified during the initial meeting. Often, vehicles and key pieces of equipment (e.g., computers) need to be procured as soon as possible so that potential sites can be visited. Local offices may need to be expanded or opened to support field-based activities. Specific criteria for the office, such as space (office and yard) and communication networks, are identified to support this activity. Core staff need to be hired so pre- and early implementation steps can go ahead. A review of activities identifies the field and programme staff needed most urgently. At a minimum, pre- and early implementation activities will require a Programme Manager and some field staff.

CONTACT DONOR AS NEEDED

Senior management contacts the donor to discuss any concerns identified during the review of the design and contract. Some issues are negotiated during a follow-up meeting.

PLAN PRE-IMPLEMENTATION STEPS AND TIMELINE

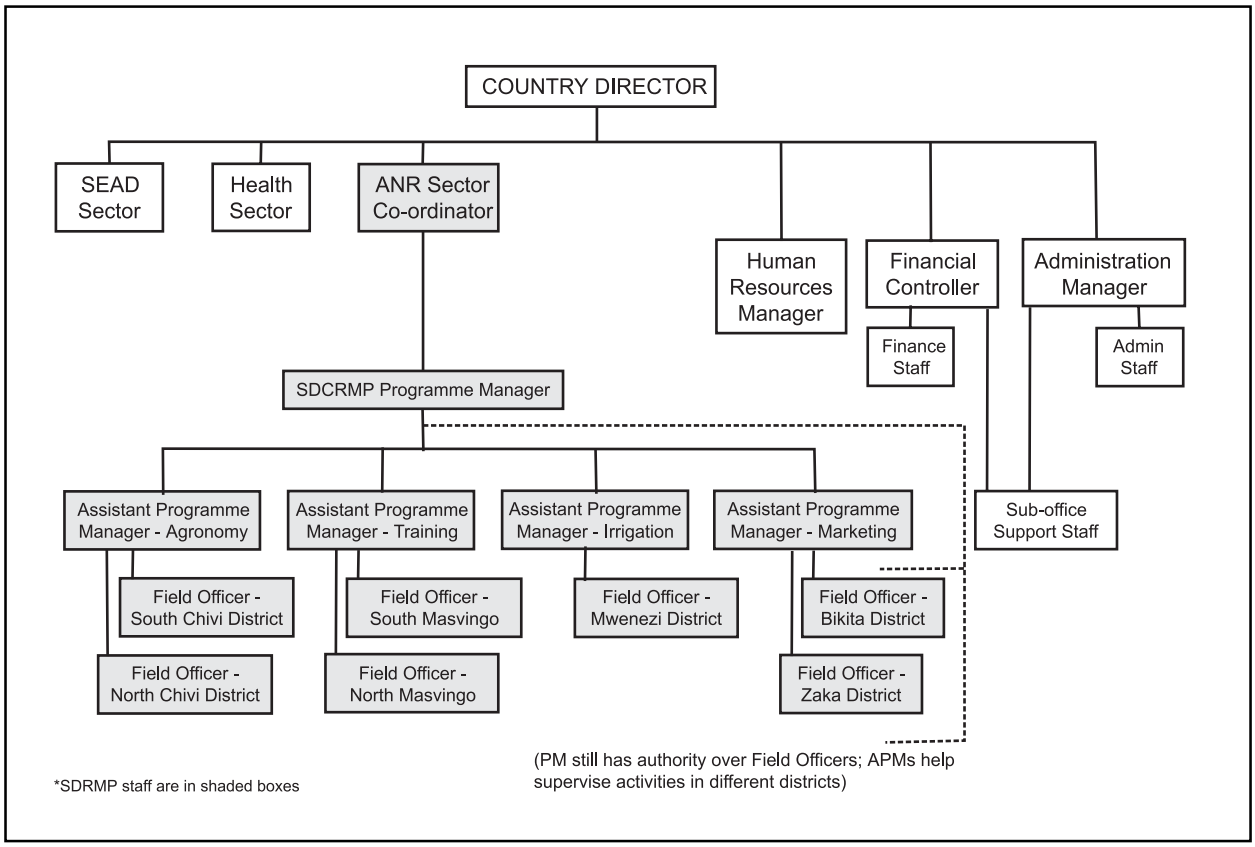
A work plan for pre-implementation steps (including priority administration issues and donor follow-up) is prepared to identify specific tasks, deadlines, and responsible parties. The ANR Sector Co-ordinator is responsible (in the interim, if a Programme Manager is not in place) for monitoring progress on the work plan. Meetings are held as necessary at this level until systems are in place and activities are in full implementation.

FORM THE PROGRAMME TEAM

Successful implementation of a multi-disciplinary programme depends a great deal on the quality of staff. Often, insufficient time is dedicated to the staff hiring and induction process. Taking time to follow a rigorous process during recruitment and training can not be overemphasised.

DEVELOP TEAM STRUCTURE

CARE Zimbabwe currently maintains a fairly standard hierarchical programme organisational structure cascading from Country Director to Sector Co-ordinators to Programme Managers to Field Officers, etc.[1] There are separate support service departments for Administration, Finance and Human Resources.



Members of the SDCRMP team meet regularly to plan activities, share information and evaluate methodologies and progress (see job descriptions in Annex 2.1). This team is then formally linked with other programmes through the Field Management Team (a team of managers in each field office), and the Senior Management Team (a team of Country Office senior management and field office managers), which meet regularly to discuss programmatic and administrative issues. Prior to adopting an HLS framework, the sectors operated for the most part in isolation —information sharing was inconsistent and collaboration was haphazard.

[1] In the most recent phase of SDCRMP, each Field Officer was responsible for 6-8 communities depending on distances between sites and mode of transport.

RECRUIT APPROPRIATE STAFF

In recruiting and selecting staff, the essential qualifications for each position should be defined, as well as the personality requirements. Most positions will require a combination of technical qualifications in areas such as agriculture, health, etc., as well as non-technical qualifications in areas such as community mobilisation, participatory processes, creative thinking, etc. Different levels of responsibility sometimes require certain qualifications; for example, Programme and Assistant Programme Managers usually must have a university degree.

The recruitment process involves placing an advertisement in local papers, identifying a short-list of candidates for interviews, developing a list of interview questions (and tests, where relevant — computer proficiency, typing, writing, etc.), and forming an interview team that includes the supervisor, Human Resources person, and possibly a co-worker. After the interviews are completed, the interview team meets to discuss their selection, the Human Resources person checks employment references, and an offer is made. Staff are hired on a 3 to 6 month probationary period.

TRAIN PROGRAMME STAFF

Experience has shown that the quality, confidence and efficiency with which field staff can do their work relate specifically to the thoroughness of their induction programme. New staff participate in a 2-week induction programme. This programme introduces the recruit to all staff, and covers CARE structure (international and national), policies, procedures, and programmes. Human Resources staff arrange this programme, including meetings with each sector and department and field visits to sub-offices and selected sites. The appropriate supervisor then arranges a more detailed orientation to the SDCRMP including background, goals and objectives, approach, job description, and responsibilities.

Finally, as required, necessary skills building also takes place during the induction period. This is sometimes done through experiential learning, whereby staff are given a task to complete, and based on their results, supervisors determine what skills they lack. Thus, new staff are given opportunities to complete certain activities with little or no direct CARE experience or training. Formal training is then based on their experience and specific needs.

For example, new SDCRMP Field Officers were provided with basic information about cause and effect relationships concerning soil erosion and given the task of creating awareness campaigns in communities. During the debriefing, it was clear that most Field Officers tried to teach rather than search for more participatory ways to build awareness. In response formal staff training was done on teambuilding, facilitation and participation.

REGULARLY EVALUATE PERFORMANCE

All staff receive a bi-annual performance evaluation from their supervisor. As part of SDCRMP's bi-annual planning workshop (see Section 13), priorities for the next 6 months are identified and Field Officers develop their work plans accordingly. Work plan outputs identify the effectiveness areas (EAs) that will be monitored as part of their performance evaluation at the end of the 6-month period (see example in Annex 2.2).

DEVELOP SUPPORT SYSTEMS

Each support department is set-up to (1) ensure adherence to CARE rules, systems and procedures; (2) adhere to contract compliance requirements of each donor; and, (3) efficiently support field operations. Although support departments are not involved in day-to-day programme concerns, they are critical for successful implementation. Regular planning with each department is needed from the start, including forecasts of financial and resource (people, materials and equipment) requirements, and analysis of their most efficient use.

SET-UP ADMINISTRATIVE SYSTEMS

The roles and responsibilities of the Administration Department include:

- Procurement of goods and services
- Lease management
- Service contracts
- Vehicle fleet management
- Asset management
- Administrative contract compliance issues (e.g., asset disposal)

CARE has a Senior Administration Department in Harare that oversees sub-office administrative units. Headquarters is most significantly responsible for external procurement, fleet management, and systems and procedures monitoring of the sub-office, particularly materials management.

Because SDCRMP involves significant purchases and transfer of materials to communities, it is critical to have a sound and efficient materials management system that adheres to contract compliance issues. Each staff member in the process (i.e., Administrators, Programme Managers, and Field Officers) is given materials management responsibilities as part of their job description. For Field Officers this is particularly critical at community level (see Section 5). CARE has developed a comprehensive procurement policy and procedures (see Annex 2.3 for a summary diagram of the procurement process). Separate guidelines have been developed for asset management, vehicle use, etc.

Although a sound materials management system is in place, CARE has found that adherence to this system has been inconsistent. Formal annual audits are now done, as well as spot internal audits to make sure procedures are rigorously followed.

SET-UP FINANCIAL SYSTEMS

Accurate and up-to-date financial records (as well as inventories of materials and equipment) are essential for donor confidence in CARE's ability to manage a programme. Maintaining such records also enables an organisation to respond quickly and accurately to donor queries.

Like the Administration Department, CARE's Finance Department is managed from Harare with sub-office financial units. The Finance Department is responsible for:

- Requests for funds from donors
- Monthly reconciliation of budget
- Monitoring expenditures by line items
- Periodic internal audits to check on adherence to systems and procedures
- Financial contract compliance issues

A separate account is maintained for programme-related expenditures with specific codes identified for specific expenditures (e.g., salaries, training, materials, etc.). Accounts of expenditures are maintained in full compliance with donor accounting requirements. CARE International and donor reporting systems often differ, requiring multiple reporting formats. Like the Administration Department, auditing is a critical role of the Finance Department.

For SDCRMP, the communities' financial contributions (specifically for irrigation systems) are tracked not only by the community but also within the overall budget. The line item dedicated to support material purchases from the donor also allows for credits (based on contributions from specific communities). These costs are recorded to allow each contribution from a community to be reconciled individually.

SET-UP HUMAN RESOURCE SYSTEMS

In an effort to ensure that national staff personnel issues are managed and supervised in a uniform, equitable and objective way, CARE Zimbabwe developed a Human Resource Manual. This manual serves as a reference document outlining the rights, responsibilities and obligations of national employees and CARE Zimbabwe as an employer. These guidelines, which continue to evolve, cover the following issues:

- Recruitment and hiring policy
- Contracts of employment
- Duty allowance
- Benefits policy
- Employee Code of Conduct & Disciplinary Guidelines
- Grievance policy
- Performance evaluation
- Acting appointment and allowances
- Salaries
- General leave

DEVELOP OR REVISE MEMORANDUM OF UNDERSTANDING

CARE Zimbabwe uses Memorandum of Understanding (MOU) to formalise the roles and responsibilities of its partners. MOUs are developed for government stakeholders at all levels (national, provincial and district), as well as other partners directly involved in or affecting implementation (research organisations, other NGOs, churches, etc.). The relationships developed through MOUs help make better use of resources, and improve flows of information and communication.

DISSEMINATE PROGRAMME INFORMATION TO ALL PARTNERS

A programme brief is prepared providing an initial overview of the objectives, outputs, and activities, as well as the roles and responsibilities of the various partners. This information is distributed to implementing partners —government, research institutions and universities, NGOs, CBOs and private sector organisations— most of whom were likely involved in the design phase, or are otherwise aware of the programme (see Annex 2.4 for details on SDCRMP partners).

DRAFT OR REVISE MEMORANDUM OF UNDERSTANDING

Once information is shared, MOUs can be drafted with each partner to formalise working arrangements (see Annex 2.5). The MOU helps limit confusion or conflict when disagreements arise as to "who was responsible for what". Though not legally binding, they carry considerable weight with donors and government by officially legitimising partnerships.

When partners want to work in project communities and benefit from CARE's local presence and mobilisation work, CARE has found it important that MOUs clearly state the responsibilities of CARE staff, as sometimes these arrangements take a lot of time for Field Officers. Partners working in communities must follow the project's participatory approach.

When CARE is working with a new partner or the working relationship changes, a meeting may be necessary to discuss details of the MOU. If an MOU is already in place with a partner, this may not be necessary. Draft MOUs are circulated to each signatory with a deadline given for their comment and approval. Each partner keeps a copy of the final signed MOU.

FINALISE MOU AND PROGRAMME INFORMATION DOCUMENT

Once all comments are received and each partner gives approval for the MOU, a final copy is prepared and distributed for signing. Once MOUs are signed, a complete information document is provided to each partner, and includes a copy of the signed MOU and an overview of the objectives, outputs, activities, and timeline (see Annex 2.5).

CREATE LINKAGES AT NATIONAL AND PROVINCIAL LEVEL

With all relationships forged, meetings are held to officially begin activities with partners. These meetings are held at national and provincial level, with some district representation; thus, discussions address broader issues than district inception workshops (see Step 6). CARE integrates programme management into the existing structures used by government to co-ordinate their activities, namely through the Provincial Natural Resources Committee.

CONTACT PARTNERS

CARE senior management staff meet with the Provincial Administrator to discuss the programme and introductory meetings. Then CARE visits provincial heads of departments and ministries one-on-one, for the same purpose. A meeting of the Provincial Development Committee (PDC) is called, to introduce the programme formally.

HOLD PROGRAMME INTRODUCTORY MEETINGS

The first introductory meeting is held with the PDC. The PDC oversees all provincial-level issues, and is chaired by the Provincial Administrator (of the Ministry of Local Government). Members of the PDC include the most senior member of each agency at the provincial level. CARE senior management staff briefly review the objectives, outputs and activities, and request a special meeting of the Provincial Natural Resources (NR) Committee.

A second introductory meeting is held with the Provincial NR Committee, a sub-committee of the PDC responsible for agriculture and natural resource issues. Committee members include provincial heads of relevant agencies (e.g., Agritex, Forestry Commission, DNR, etc.), and the chair is Agritex. At this meeting, after appropriate welcomes and introductions, CARE presents an overview of:

- Objectives and outputs
- Activities
- Key principles of the programme (e.g., community-management approach, HLS, etc.)
- CARE's implementation strategy
- Reporting and management structures

MOUs and partner roles and responsibilities are reviewed so that all partners are aware of each other's role. Possible implementation constraints are discussed to minimise potential role conflicts amongst partners. Partners are given an opportunity to raise their issues or concerns. Inevitably, the issue of a lack of government resources is raised —any support to be provided to partners needs to be discussed internally before this meeting, with policies in place.

To ensure government support, CARE has had to provide logistical support, and often travel and subsistence claims, to government counterparts when on project business. CARE sometimes provides transport, particularly for large events. In the past, CARE has also provided motorcycles and computers to RDCs to support their involvement (with limited success).

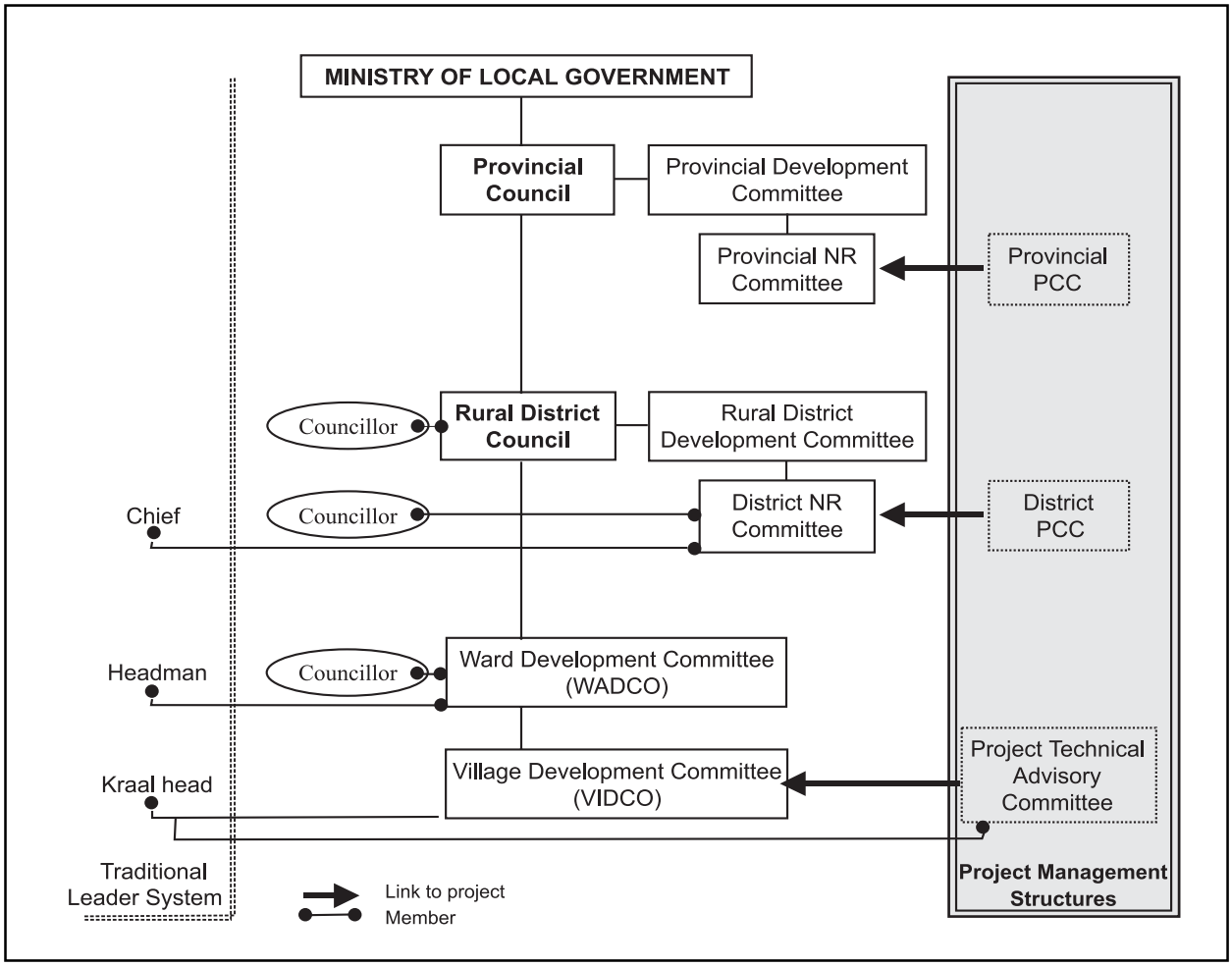
Also at this meeting, CARE requests the formation of the Provincial Project Co-ordinating Committee (PPCC), a sub-set of members of the Provincial NR Committee that are directly working with CARE on the programme, including government and representatives from research, NGO, and other partners. This sub-group meets on an as-needed basis for specific programme issues.

The introductory workshop closes with a review of any action points from the meeting. CARE programme staff immediately follow-up on any outstanding issues from the introductory meetings with the donor or other necessary parties.

MAINTAIN ON-GOING INVOLVEMENT AT PROVINCIAL LEVEL

After introductory meetings are held, CARE fits into the Provincial NR Committee, which meets bi-annually – at this time reports can be made on programme activities. This committee reports to the PDC. When programme-related issues need to be discussed in more detail, CARE requests a special session of the PPCC. The PPCC's function is to agree on wider issues that are provincial in nature, and to ensure support at district and ward level.

After the introductory workshop, special sessions of the PPCC are usually required early on in the programme cycle, with fewer meetings during the final stages. The CARE Programme Manager attends provincial-level meetings.



CREATE LINKAGES AT DISTRICT AND LOCAL LEVEL

Inception workshops cover similar topics to the introductory meetings. However, these workshops are held in each district where the programme is being implemented. Discussions involve partners actually working in the field, and focus on more practical implementation issues. CARE integrates programme management into the existing structures used by government to co-ordinate their activities, namely through the District Natural Resources Committee.

CARE has tried different ways of linking to government during implementation, including building RDC capacity to implement activities alone. Success was minimal due to human and financial constraints facing local government in Zimbabwe. Now, capacity building of government partners is done using a hands-on approach, involving agencies at all stages, exposing them to CARE's methods, but not expecting them to take over implementation when CARE exits.

CONTACT PARTNERS

CARE senior management staff meet with the District Administrator and Chief Executive Officer (CEO) of the Rural District Council (RDC) to discuss the programme and inception workshop. Then CARE visits district heads of departments and ministries one-on-one, for the same purpose. After these meetings, a full council meeting of the RDC is called, to introduce the programme formally[2] . At the RDC meeting, CARE senior management staff briefly review the objectives, outputs and activities, and request a special meeting of the District Natural Resources (NR) Committee, for the purposes of an inception workshop.

HOLD PROGRAMME INCEPTION WORKSHOPS

The inception workshop is held with the District NR Committee, a sub-committee of the Rural District Development Committee (RDDC) responsible for co-ordinating agriculture and natural resource issues and fitting activities into district development plans. They also ensure district and higher-level policies are followed, ratify by-laws, and resolve conflicts. Members include district officers of relevant agencies (e.g., Agritex, Forestry Commission, DNR, etc.), councillors, and representatives of NGOs, research organisations, and private sector groups working in the district. This committee reports to the Rural District Development Committee, which oversees all district plans and is chaired by the Ministry of Local Government's District Administrator. Councillors report to full RDC meetings.

At the inception workshop, CARE presents an overview of the programme that covers the same topics as introductory meetings. MOUs and partner roles and responsibilities are reviewed so that all partners are aware of each other's role. Possible implementation constraints are discussed to minimise potential role conflicts amongst partners —this is especially important for field workers. Again, the issue of a lack of government resources is usually raised and policies should be in place before this workshop is held.

[2] The Rural District Council is made up of councillors elected to represent each ward within a district. A district is made up of a number of wards, and a ward includes a number of villages.

Also at this meeting, CARE requests the formation of the District Project Co-ordinating Committee (DPCC). The DPCC involves those members of the District NR Committee that are working with CARE on the programme, including the CEO, district officers, councillors from relevant wards, and representatives from research, NGO, and other partners. Sometimes traditional chiefs are also included in DPCC meetings.

Priority actions for partners are discussed at the inception workshop, including to:

- Provide a list of potential sites for preliminary inspections
- Prepare to participate in feasibility studies for site selection (see Section 3). Teams include field workers from relevant line agencies, who are trained in the assessment methods before the studies begin. Timing and logistics are confirmed later.
- Inform field workers of their roles, and upcoming feasibility studies.

The inception workshop closes with a review of any action points from the meeting. CARE programme staff follow-up on any outstanding issues from the introductory meetings with the donor, provincial or national-level representatives, or other necessary parties.

When involving local government (i.e., RDCs), CARE has learned to:
- *Use existing RDC structures (e.g., Natural Resources Committee) as much as possible*
- *Create an active interest in the project by RDC members (CEO and PO) and councillors*
- *Emphasise RDC's accountability to communities instead of taking a project-focus*
- *Do not rely on only one person in the RDC*

MAINTAIN ON-GOING INVOLVEMENT AT DISTRICT AND LOCAL LEVEL

After inception workshops, CARE fits into the District NR Committee, which meets monthly. CARE reports on activities as needed. When programme-related issues need to be discussed in more detail, CARE requests a special session of the DPCC. The DPCC's function is to integrate CARE activities into district plans, strengthen support for CARE activities, and discuss implementation issues with partners at district level. With the programme integrated into district plans, resources can be channelled towards activities and communities. Special sessions of the DPCC are usually required early on in the programme cycle, with fewer meetings later on. Usually, special sessions of the DPCC are only needed quarterly. The Field Officer (and managers, as necessary) attends district-level meetings.

At the local level, CARE facilitates linkages to the RDC system[3] and the traditional system[4] through project committees, in particular the Technical Advisory Committee. The particular set-up differs between communities, depending on local power dynamics. Institutional analysis done during community orientation helps identify the legitimate structures at the local level that can be linked to the programme (see Section 4).

[3] Ward Development Committees (WADCOs) include elected ward councillor, traditional leaders, extension workers at the ward level, and VIDCO representatives. Village Development Committees (VIDCOs) include elected village members, extension workers at the village level (e.g., VCWs), traditional leaders, and *ex officio* members such as Agritex. These bodies report to the RDC.

[4] Traditional leaders are responsible for land allocation in the Communal Areas, and are seen as the custodians of this land. Their participation in and support is critical for enforcing project constitutions and by-laws that regulate catchment uses (see Section 7).

BEGIN DEVELOPING THE EXIT STRATEGY

The programme exit strategy is designed to ensure sustainable and self-reliant community management of local resources once CARE has withdrawn. The exit strategy essentially monitors that all activities are completed, systems are in place for on-going management, and community capacity is strengthened. This strategy must be considered early on in implementation.

SDCRMP activities are designed with CARE's exit in mind. The intent is to gradually increase the responsibilities by communities and partners, and decrease inputs by CARE. The following principles are included in the exit strategy:

- Identify critical outputs and activities for a successful exit (i.e., for sustainability). Ensure progress of these activities is regularly monitored (see Section 13).
- Discuss CARE's exit and roles and responsibilities of partners during initial meetings and workshops (as discussed in this section).
- Discuss CARE's exit during initial community mobilisation (see Section 4).
- Ensure all necessary training has been done. CARE's "Community Resources Training Manual" includes activities to evaluate training success and determine the training needs of participants on an on-going basis. Regular evaluation helps ensure that the capacity building needed for sustainability is developed.
- Ensure all systems for on-going management by the community are in place (see relevant steps in Sections 5 to 11). Particularly important for CARE's exit are systems for infrastructure maintenance, systems for community monitoring and evaluation, processes for conflict resolution, plans for future activities and community visions, systems for financial sustainability, and the presence of strong local leaders.
- Ensure linkages are developed between different segments of the community, amongst different communities, and between communities and service providers (especially the RDC). These linkages should provide support, information, resources, etc. to each community, so they are no longer operating in isolation.
- Towards the end of the programme, hold exit strategy workshops in each community and district. Communities should identify what they still need from CARE. Partners should be aware of the programme's outputs, and clear on their roles in supporting communities.
- Organise a hand-over ceremony when appropriate, to formally acknowledge achievements of the community and their on-going responsibilities.

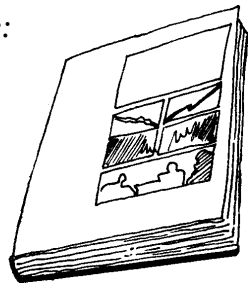
The following problems are sometimes seen after exiting a community:

- *Weakening and eventual collapse of committees*
- *Rushing to finish physical outputs before exiting, and ignoring social outputs*
- *Collapse of project due to abrupt withdrawal*
- *Individuals taking over ownership of community tools and resources*
- *Reduced contact with extension workers*
- *Lack of funds to maintain and sustain activities*

An exit strategy document is prepared and updated continuously, to develop and formalise the principles and mechanisms for CARE's exit with all interested parties, including the community.

For further information related to pre-implementation, please see:

- *CARE Zimbabwe. Country Office Profile*
- *CARE Zimbabwe. Human Resource Manual*



Section 2 Annex

Annex 2.1 SDCRMP job descriptions

Job Description: **ANR Sector Co-ordinator**

Name:
Level/Grade:
Reports to: Country Director

Summary:

The ANR Sector Co-ordinator provides overall line management responsibility for the SDCRMP, as well as other programmes within the sector. In this capacity the ANR Sector Co-ordinator oversees all aspects of the programme from recruitment to implementation to finance and administration issues. The Sector Co-ordinator ensures that standards and systems of CARE are maintained and contract compliance issues are rigorously adhered to. S/He must also work closely and maintain a strong working relationship with donors, partners and government counterparts throughout the life of the project. The Sector Co-ordinator must certify that all monitoring and progress reports are submitted timely to donors and ensure that all programme obligations are met with all respective stakeholders.

Responsibilities & Tasks

Ensure effective project implementation
- Ensure professional compliance with contract deliverables
- Oversee and ensure that ANR Standard Assessment procedures and the Household Livelihood Security Framework are applied to all projects
- Develop and maintain a coherent and effective monitoring and evaluation system
- Oversee recruitment, training and capacity building of all ANR staff
- Conduct regular planning workshops and conduct site assessments on a quarterly basis
- Provide direct supervision of Programme Manager

Financial and Administration Oversight
- Ensure management of project budget within agreed framework
- Ensure financial management and administrative standards are maintained. Conduct periodic audits of all systems

Networking
- Develop and maintain relationships/network with a range of stakeholders in the ANR sector in Zimbabwe (e.g., GoZ, NGOs, donors, research institutions)

Reporting
- Ensure timely monitoring and progress reports are submitted to donors
- Ensure project information and lessons learned are disseminated to stakeholders nationally and internationally

Job Description: **SDCRMP Programme Manager**

Name:
Level/Grade:
Reports to: Sector Co-ordinator

Summary:

The Programme Manager is responsible for day-to-day implementation of SDCRMP activities at field level in collaboration with the ANR Sector Co-ordinator (based in Harare). The Programme Manager will ensure that CARE's standards and systems are maintained and fulfil the implementation of activities within a specific timeframe and budget. The PM is charged with overseeing activities as outlined in relevant documentation, and with directly supervising administration support staff, Assistant Programme Managers (APMs) and Field Officers. He must also work closely and maintain a strong working relationship with government counterparts throughout the life of the programme. The PM must also certify that all monitoring and progress reports are submitted timely to supervisors and ensure that all contractual obligations are met with communities.

Responsibilities & Tasks

Ensure effective implementation of required activities in programme area

- Ensure effective, timely and co-ordinated implementation of all outputs as indicated in relevant documents
- Effective management/support of FOs to ensure accomplishment of work plans and attainment of benchmarks
- Monitor implementation by visiting sites on a regular basis to ensure that critical milestones are attained as per the established activity schedule
- Prepare quarterly procurement plans and budgets
- Develop good rapport with government, NGOs and collaborating organisations
- Mobilise locally available resources, ensure effective and proper utilisation of resources and maintain accurate and up-to-date Asset Inventory Registers
- Monitor closely the financial situation of activities in relation to commitments made
- Conduct other related duties as directed by the ANR Sector Co-ordinator

Contribute to the monitoring, evaluation and further development of the programme

- Participate in the development and implementation of baseline and/or monitoring methodology and tools
- Supervise the timely collection of data and information as required
- Participate in the development and implementation of baseline methodology and tools

Reporting

- Maintain and periodically submit detailed Monthly and Quarterly Progress Reports
- Ensure the Management Information System is up-to-date with clearly defined SMART Benchmarks/ Targets
- Attend meetings with government officials on a regular basis at provincial and district levels

Job Description: **SDCRMP Assistant Programme Manager - Agronomy**

Name:
Level/Grade:
Reports to: Programme Manager

Summary:

Reporting to the Programme Manager, the Assistant Programme Manager is responsible for implementation of SDCRMP agronomy activities at community level, in collaboration with Field Officers. The APM-Agronomy is charged with overseeing agronomy-related activities as outlined in relevant documentation, and with directly supervising Field Officers. He/She must also work closely and maintain a strong working relationship with research institutions (national and international), universities and government counterparts throughout the life of the programme. The APM-Agronomy must also certify that all monitoring and progress reports are submitted timely to supervisors and ensure that all contractual obligations are met related to agronomy objectives and outputs.

Responsibilities & Tasks

Ensure effective implementation of required activities in programme area

- Ensure effective, timely and co-ordinated implementation of all agronomy-related outputs as indicated in relevant documents
- Effective management/support of FOs to ensure accomplishment of work plans and attainment of benchmarks per agronomy outputs
- Ensure completion and review of Participatory Catchment Plans at all sites and required technical backstopping and support effects the implementation of completed PCPs
- Monitor implementation by visiting sites on a regular basis to ensure that critical milestones are attained as per the established activity schedule
- Prepare quarterly procurement plans and budgets
- Develop good rapport with government, NGOs and collaborating research organisations
- Mobilise locally available resources, ensure effective and proper utilisation of resources and maintain accurate records
- Provide uniform technical training in collaboration with designated partners
- Liase closely with other APMs in planning and sharing of resources
- Conduct other related duties as directed by the SDCRMP Programme Manager

Contribute to the monitoring, evaluation and further development of the programme

- Participate in the development and implementation of baseline and/or monitoring methodology and tools
- Supervise the timely collection of data and information as required
- Participate in the development and implementation of monitoring methodology and tools

Reporting

- Maintain and periodically submit Field Visit Form Reports and subsequently produce detailed Monthly and Quarterly Progress Reports
- Maintain an up-to-date Management Information System with clearly defined SMART Benchmarks/ Targets for the agronomy outputs and objectives
- Attend meetings with government officials on a regular basis at provincial and district levels

Job Description: **SDCRMP Field Officer**

Name:
Level/Grade:
Reports to: Assistant Programme Manager

Summary:

The SDCRMP Field Officer is responsible for day-to-day implementation activities at the community level. Implementation of these activities is established in a specific timeframe and budget in collaboration with supervisory staff. The Field Officer is charged with overseeing activities as outlined in CARE's *Community Resources Management Guidelines* and *Community Resources Training Manual.* He/she must also work closely and maintain a strong working relationship with government counterparts throughout the life of the programme. The Field Officer must also certify that all monitoring and progress reports are submitted timely to supervisors and ensure that all contractual obligations are met with communities.

Responsibilities & Tasks

Ensure effective implementation of required activities in programme area

- Collect data for social, technical, financial and economic feasibility studies in the process of dam identification and selection in collaboration with appropriate government counterparts
- Assist communities to democratically elect committees to oversee activities and the preparation of a programme agreement (social contract) and by-laws
- Motivate participants to undertake dam and irrigation rehabilitation activities identified by the feasibility studies
- Promote community participation in all activities, maximising community contributions and sensitising all participants of their roles and responsibilities
- Facilitate programme-planning processes with communities using process-oriented participatory methodologies
- Facilitate in the participatory community development training of participants using learner-centred approaches and social mobilisation skills
- Complement government extension agencies on technical aspects of the programme
- Develop good rapport with government, NGOs and community leaders at Ward and Village level
- Further the capacity building of designated government counterparts
- Mobilise locally available resources, ensure effective and proper utilisation of resources and maintain accurate and up-to-date Asset Inventory Register
- Implementation, monitoring and evaluation of community-managed Agronomy demonstrations and collection and compilation of statistical data for analysis and interpretation to communities
- Conduct community-based training as required

Contribute to the monitoring, evaluation and further development of the programme

- Participate in the development and implementation of baseline methodology and tools.
- Supervise the timely collection of data and information as required

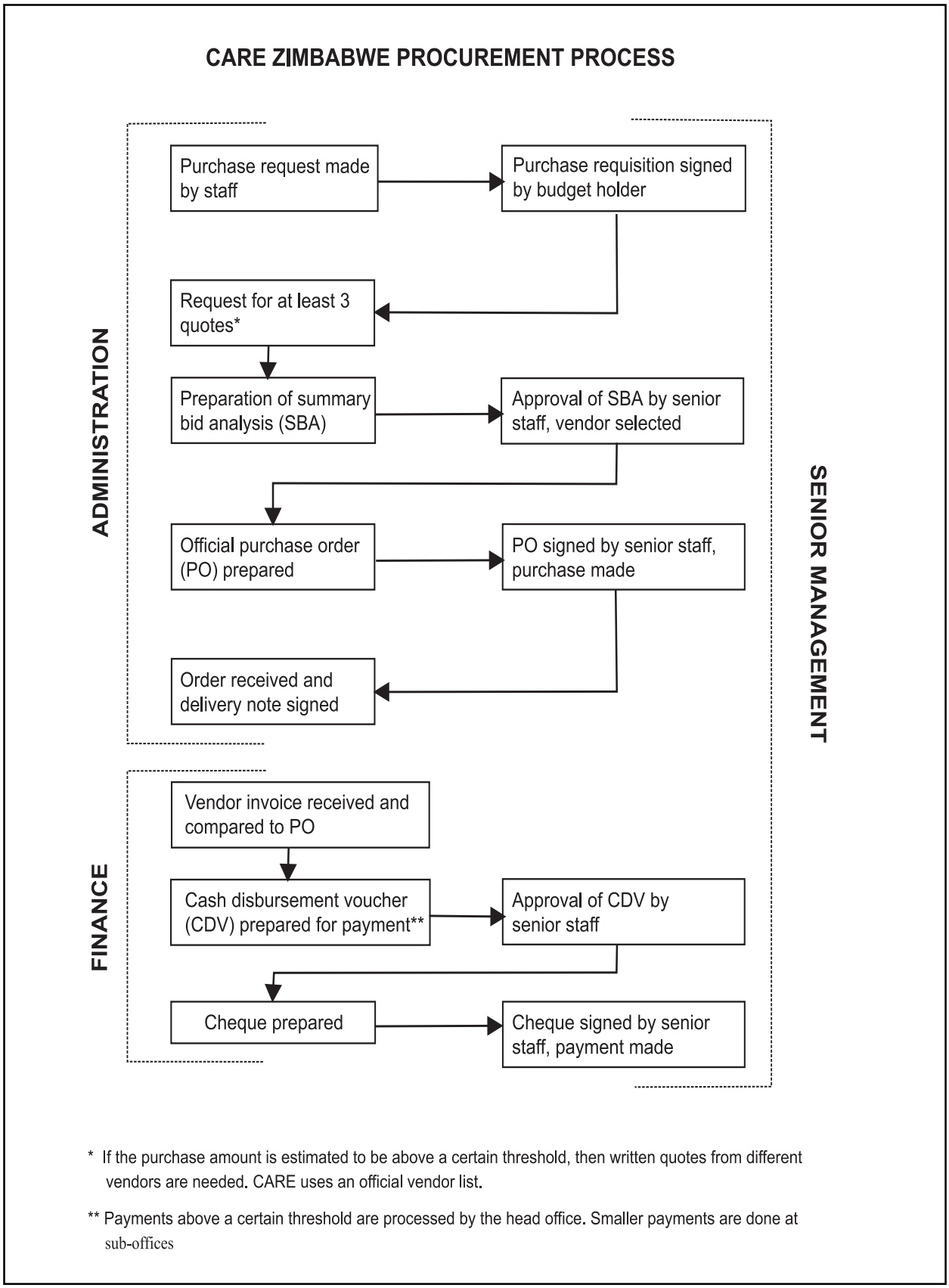
Reporting

- Maintain and periodically submit Field Officer Visit Form Reports and subsequently produce detailed but summarised Monthly Progress Reports
- Maintain an up-to-date Management Information System with clearly defined SMART Benchmarks/ Targets
- Attend meetings with government officials on a regular basis

Annex 2.2 Example – Staff performance evaluation form

July - December 2000		**Performance Evaluation**				
	Name:	Position: Programme Manager (Level 7)				
	Date Hired:	Supervisor: ANR Sector Co-ordinator				
	Project: SDCRMP	Salary :				
#	**Description**		**Wt**	**Mk**	**Sc**	MM
A	**Performance Accomplishments vs Expectations**	**Comments**	100			
	Focus on Quality and Quantity					
1	Overseeing on-going implementation of AusAID CFSP (staff development, site model development, implementation of M&E plan and overall adherance to logframe)		20	0	0	5
2	Continued implementation of Oak Foundation Small Dams Project (completion of dam rehabilitation activities and overall adherance to logframe)		15	0	0	5
3	Continue leadership responsibilities of HLS integration at sub-office level (regular team meetings with RMFP, AGENT and Health senior staff, field officers and HQ staff related to HLS implementation at the 15 sites)		15	0	0	5
4	Provision of technical support to staff related to Agronomy Component of both SDRP projects (link with DFID programme and share experiences)		10	0	0	5
5	Government liaison and networking with other projects/NGOs		5	0	0	5
6	Ensure operations are per budget and systems and standards of CARE Zimbabwe maintained		5	0	0	5
7	OIC/SDRP Programme Manager (March-June) Oversee management of technical staff, APMs and overall SDRP programmes. Provide management oversight of sub-office with regards to maintaining systems and standards of CARE.		30	0	0	0
B	Initiative, Resourcefulness and Effectiveness		5	0	0	5
C	Team Work and Co-operation		5	0	0	5
D	Atttitude and Approach		3	0	0	5
E	Conceptual Ability		3	0	0	5
F	Decision Making		3	0	0	5
G	Communication Skills Verbal and Written		4	0	0	5
H	Management and Leadership		4	0	0	5
I	Coaching, Mentoring, Training		3	0	0	5
Areas for Improvement/Observations		**Recommendations**	100	0	0	70
			0%			
Employee Signature:		Supervisor Signature:				

Annex 2.3 Summary diagram of CARE Zimbabwe's procurement process



* If the purchase amount is estimated to be above a certain threshold, then written quotes from different vendors are needed. CARE uses an official vendor list.

** Payments above a certain threshold are processed by the head office. Smaller payments are done at sub-offices

Annex 2.4 Areas of operation for programme partners

- Jurisdictions and mandates of government agencies in Zimbabwe:

Ministry of Lands and Agriculture: Guides and promotes the development of the agriculture sector. Includes Agritex, DR&SS, and Veterinary Services.
Department of Agricultural, Technical and Extension Services (Agritex): Delivers technical advice to farmers. There is at least 1 Agritex extension worker in each ward.
Department of Veterinary Services: Prevents and controls animal disease, and promotes animal production. There are extension workers in the field.
Department of Research and Specialist Services: Researchs and develops agricultural technology.
Ministry of Water and Rural Resources: Oversees water development and rural infrastructure.
Department of Water Development: Mandate for water resources management. Plans, implements and operates, or supervises, water projects.
District Development Fund (DDF): Channels funds for most district-level investment expenditures (i.e., public works).
Department of Natural Resources (DNR) / Natural Resources Board (NRB): Responsible for conservation works in Communal Areas and enforcement of natural-resource by-laws.
Forestry Commission: Responsible for forestry extension services, and provides support directly for nursery establishment and protection of catchment areas
Ministry of Health: Responsible for extension services in rural areas that provide health education, particularly related to water and sanitation hygiene
Ministry of Youth, Development, Gender and Employment Creation: Supports Village Community Workers in the field.
Ministry of Local Government and National Housing: Administers local planning and development. Provides support to Rural District Councils.
Rural District Councils: Local level of government, made up of elected councillors from administrative wards in the district, and appointed representatives from the Ministry of Local Government.

- Activities of research institutions:

Silsoe Research Institute: Promoting the use of soil and water conservation methods.
University of Zimbabwe, Institute of Environmental Studies: Looking at water development and rural livelihoods.
CIMMYT: An international research organisation for maize and wheat, looking at new maize varieties.
International Crops Research Institute for the Semi-arid Tropics (ICRISAT): Testing improved varieties of small grains.
International Centre for Research on Agro-forestry (ICRAF): Promoting improved soil fertility through agro-forestry trials and improved fallows.
HR Wallingford: Investigating dam siltation and smallholder irrigation.

- Activities of non-governmental organisations:

Zimbabwe Farmers' Union: Representing non-commercial farmers.
Heifer Project International: Working on projects to re-build livestock assets.
ITDG: Working on rural development projects in the region, and investigating drip irrigation.
Southern African Unit for Local Resource Development (SALRED): Promoting community seed banks and open-pollinated varieties.
Zirrcon: Local NGO supporting establishment of tree nurseries for indigenous and exotic tree species
Mwenezi Development Training Centre: Local NGO providing training communities in leadership and natural resource conservation

- Activities of private sector partners:

Pannar, Pioneer, Cargill, SeedCo: Private seed companies in Zimbabwe, testing new crop varieties

MEMORANDUM OF UNDERSTANDING

BETWEEN THE GOVERNMENT OF ZIMBABWE AND

CARE INTERNATIONAL IN ZIMBABWE

ON THE

SMALL DAM & COMMUNITY RESOURCES

MANAGEMENT PROGRAMME

Geographical Area	:	**Masvingo Province (Bikita, Masvingo, Chivi, Mwenezi and Zaka Districts) and Midlands Province (Mberengwa and Zvishavane Districts)**
Coordinating Partners	:	**GOZ, Selected Communities, CARE Zimbabwe**
Implementing Partners	:	**MLWR, MA-Agritex, NRB, RDCs, DDF, Forestry Commission and CARE Zimbabwe**
Coordinating Ministry	:	**MLGRUD**
Project Duration	:	**Five Years (1995-2003) Extended in Jan. 2000**

SECTION 1

1. INTRODUCTION

1.1 The purpose of this MOU is to establish in broad terms the framework and principles for the implementation of the Small Dams for Food and Economic Security Project that is currently being implemented in selected Communal/Resettlement Areas of Masvingo and Midlands Provinces.

1.2 This MOU has been agreed upon between representatives of the GOZ in the provinces of Masvingo and Midlands and CARE International in Zimbabwe.

1.3 This MOU is comprised of two sections, as follows:

Section 1 gives a brief overview of the Project, i.e. background, purpose, methodology, site selection process, selected sites, description of planned activities and components of the Project.

Section II is specific to each province and describes the roles and responsibilities of the Implementing and Coordinating Partners. Section II also provides an overview of resources and services that the Partners will endeavour to make available to communities in support of this programme.

1.4 **The purpose of the Project is to increase food and economic security in the Provinces of Masvingo and Midlands for between 60,000-70,000 persons through the integrated management of common property resources and the rehabilitation of between 60-70 small and medium sized dams. This project intervention is designed to be a community based management programme, whereby communities are empowered to take responsibility and are enabled to assume ownership for all project activities and resulting outputs.**

2. NATIONAL PRIORITIES AND LOCAL PERSPECTIVES

2.1 There have been three drought periods since Independence in 1980, namely the drought years of 1982-1983, 1987 and 1991-1992. During the last and severest of droughts overall agricultural production was 35% below average; agro-based manufacturing fell by 30%; water shortages resulted in decreased production in mining, energy and industrial sectors. GDP fell by 11% in 1992; and GOZ expenditure deficit rose to 9% of the GNP.

2.2 In those Communal Areas most severely affected by the 1991-92 drought, 30-59% livestock losses (cattle, goats, sheep) and up to 80% maize losses were recorded. In the longer term, the drought reduced the capacity of smallholders in the CAs to produce and to withstand further shocks.

2.3 In response, the GOZ launched a comprehensive $USD 1 billion relief and recovery programme, importing 2.2 million tons of grains, oilseeds and foodstuffs to mitigate the adverse impacts. At its peak in January 1993 the programme was

successfully feeding 5.2 million people or 60% of the population of Zimbabwe. The programme also included public works, supplementary feeding of children and support for most severely drought-affected smallholder farmers.

2.4 Main constraints which continue to affect growth and development of the smallholder sector in the Communal Areas are the following:

a. - poor rainfall with low agricultural potential; 74% of the CAs are in NRs IV/V with annual rainfall between 300-650 mm;
b. - 3.5% annual rate of population growth between 1980-1990 with farmholding sizes becoming smaller and 10% of the population effectively landless;
c. - soils inherently low in fertility and further deteriorated through excessive cropping;
d. - productivity of rangelands is decreasing; lands are being over-grazed; off-takes of cattle are extremely low (88,000 or 2.2% of 4.17 million head in 1990, for example); ownership of livestock is skewed with many households lacking access to draught animal power, thereby reducing area under cultivation;
e. - high levels of out-migration by male household members resulting in shortages of on-farm labour;
f. - agricultural services for the smallholder sector have only been provided since 1980, resulting in a lack of relevant dryland technologies, farm inputs and effective extension services.

2.5 Prior and since Independence the GOZ, international and national NGOs have constructed over 600 small and medium sized earthen embankment dams in the Communal Areas. The 1991-92 drought reinforced GOZ commitment to identify the harnessing of water resources as a cornerstone of its agriculture, land conservation and water development policies.

2.6 The problem, however, is that for various technical and social reasons a large number of small dams constructed to date have either failed to meet community water needs or have developed serious structural defects and have deteriorated rapidly. Reasons for this are numerous and include: (i) poor siting of dams due to inadequate investigation prior to construction, (ii) physiographic constraints resulting in shallow dam construction with limited water retention, (iii) flawed design or supervision during construction, (iv) inadequate information provided to communities regarding maintenance requirements, (v) inadequate involvement of communities in defining and managing public uses of dam catchment areas, leading to abuses which have resulted in rapid deterioration of damworks, excessive siltation. Consequently the high financial investments made by GOZ and donors to build a large number of small and medium sized dams in the CAs have not realized full potential benefits for communities in need of water resources.

2.7 While creating and harnessing new sources of water is considered important, there is an overriding recognition that hundreds of existing small and medium

sized dams in the country are threatened because of severe environmental degradation, rapidly increasing population, competing uses for common property resources and lack of effective community participation in the holistic management of small dam facilities and other available resources.

2.8 Local authorities and communities in the CAs also recognise the high level of vulnerability caused by water scarcities and increasing environmental degradation. This recognition has motivated communities to seek solutions that will not only increase the water storage capacity of existing dams but will also enable the renovation, reactivation and thus longevity of threatened and degraded dams.

2.9 This Project is designed to support GOZ priorities by using local synergies and self-help management efforts to address and ameliorate the root causes of food and economic security in Communal Areas. The Project will support community management of agricultural environmental areas around small dam catchment areas and thereby enhance sustainable agricultural productivity with corresponding food security and income benefits for smallholder farmers.

3. BACKGROUND TO CARE PARTICIPATION

3.1 In September 1992, CARE Zimbabwe commenced emergency humanitarian relief operations in the most severely drought affected provinces of Masvingo and Midlands. Following the 1991-92 drought, CARE emergency relief interventions evolved into more permanent food security strategies under Food For Work (FFW) approaches.

3.2 In conjunction with local governmental authorities, CARE conducted in-depth research into the causes of food insecurity in the CAs of Zimbabwe, especially CAs located in Natural Regions IV and V which receive on an average less than 650 mm of rainfall annually. The FFW programme was gradually transformed into a Community Management Development Programme with transfer of project planning and implementation responsibilities on a community-by-community basis to elected community organisations (viz. Project Committees).

3.3 Project interventions based on promoting the Community Management Approach (CMA) have been developed at the grass roots level through joint cooperation between Provincial authorities and CARE. Shortcomings and lessons learned from similar projects carried out in the CAs over the past years have been examined closely in order to develop "demand based" interventions which more directly meet community needs and expectations as expressed within a community management decision-making mandate and project design framework.

4. JUSTIFICATION AND DESCRIPTION OF THE IMPLEMENTATION STRATEGY

4.4 Environmental denudation has resulted in progressively accelerating levels of siltation and is reducing the effective water storage capacity of existing small dam reservoirs and, consequently, the effective life span of small dams. Small and medium sized dams are fundamentally important for food and economic security

in the Communal Areas NRs IV and V. The objective of this Project is to reverse the spiral of chronically debilitating environmental erosion and thereby reactivate the (sunken investment) potential of the small dams which, in turn, will increase the socioeconomic well-being of communities in the CAs.

4.5 In response to this situation and after extensive discussions with MLWR, Agritex, NRB, DDF and local governments (RDCs, WaDCos, ViDCos), an implementation strategy was developed to facilitate the rehabilitation of small and medium sized dams based on community self-help, community participation (labour), community contribution (cash and CIK) using a community management process (decision-making responsibility). **This strategy has precluded any duplication of services or creation of parallel technical structures.**

4.6 In an effort to make communities more self sufficient and to reduce the operating costs of the management of common property resources, the Government of Zimbabwe is now encouraging the use of community based management methodologies in development projects at the community level. The Project design strategy supports and reinforces these principles.

5. SITE SELECTION

5.1 The site selection process is designed to be participatory while at the same time providing effective ways of identifying community sites which demonstrate high probability for successful project implementation. Extension staff and representatives from Agritex, NRB, RDCs and CARE travel to the various small and medium sized dam sites in order to complete preliminary social and technical feasibility assessments. Following the compilation of a short list of potential sites, a more in-depth technical and social feasibility study is undertaken. During this process, extensive discussions are held with communities focusing on program objectives; community response/interest and level of commitment to assume responsibility for project activities are assessed.

5.2 Currently, the project is operating in the selected small dam sites of Masvingo, Chivi, Zvishavane and Mberengwa. Additional sites will be added in Bikita, Zaka and Mwenezi depending on the availability of resources and local government priorities.

6. PROJECT COORDINATION

6.1 The activities of this Project cut across several Government Ministries and Departments and therefore appropriate coordination mechanisms will be activated by the Implementing and Coordinating Partners at the Provincial and District levels.

6.2 The Project has five components, each identified in government documents as priority areas for development in the Communal Areas. Project components collectively extend beyond the area of interest of any one ministry. Therefore it is essential to foster and encourage grass roots level coordination and "bottom up"

planning in close cooperation with the various line agencies of the Government of Zimbabwe.

7. PROJECT COMPONENTS

A brief description of the components/activities that is being implemented at each site follows:

7.1 Community Organization: Community Management and Project Committees

In cooperation with local authorities (RDCs, WaDCos, ViDCos), the Project establishes community management methods and procedures at small dam project sites in order to promote sense of ownership through participation in project activities/decisions. The Community Management Approach (CMA) will be instrumental for maximizing community contribution and transferring information and responsibilities to participants concerning their roles and responsibilities at all stages in the community project cycle.

CMA is further used to introduce communities to post-project procedures for operating and maintaining small dam watersheds and reservoir catchment areas, irrigation systems, livestock grazing and watering management and other multi-purpose water and land uses.

Two community organisations - the Dam Rehabilitation Committee and the Irrigation Committee - are established at each small dam project site for purposes of coordinating project management and decision-making activities.

7.2 Environmental Protection: Rehabilitating Dam Catchment Areas

In the preparation stages preceding physical rehabilitation of small dam structures and implementation of other work plans, each community is involved in discussions, technical assistance training workshops, site inspections, cost-sharing arrangements and information exchanges in collaboration with extension staff from Agritex, NRB and CARE. Communities inspect the dam catchment areas in order to understand and identify causes and consequences of environmental degradation, i.e. poor water retention, gulley erosion, denudation due to excessive livestock cropping and un-managed grazing, deforestation and progressive degradation of dam structures.

Thereafter, communities identify resources required to rehabilitate and protect dam reservoir catchment areas. In addition, community land- and water-use patterns, rights and other issues are analyzed in order to establish plans and agreements for improving the productive uses of scarce water resources. Trees and grasses may be planted to restore and/or protect eroded gullies. Community managed woodlots may be established together with fuelwood conservation methods, such as introducing energy efficient woodstoves. Each of these integrated strategies for restoring sustainable agricultural environments (SAEs) will involve high levels of behaviour change within communities, facilitated through

active promotion and regulation of the use of communal resources.

7.3 Physical Works: Rehabilitating and Upgrading Dam Structures

Detailed work plans and cost-sharing arrangements for the rehabilitation and protection of dams and dam catchment areas is coordinated and reviewed by community committees in cooperation with Agritex, DDF and CARE. Potential works will vary from site to site, and may include: strengthening or raising dam embankments and spillways, gulley reclamation, construction of silt-traps, desiltation, afforestation, planting of water-conserving grasses, fencing of livestock watering locations, etc. An implementation work schedule and resource allocation plan is established and, thereafter, physical work on rehabilitating dam structures and upgrading other facilities is initiated.

7.4 Irrigation Horticulture: Assisting Women to Improve Household Garden Plots

In order to address problems of inefficient farming and water management practices and to ameliorate the tedious and energy intensive practice of bucket irrigation by women, more appropriate technologies for water distribution to vegetable garden areas are tested. Gravity irrigation will be developed wherever this is feasible. CARE is also field testing various models of treadle and rope-and-washer pumps in order to develop appropriate irrigation systems which have high labour and time-saving advantages.

7.5 Marketing Inputs and Outputs: Community Based Agribusiness Dealer Network

Marketing within the context of this Project has two dimensions; i.e. marketing of agricultural inputs to smallholder farmers and marketing of agricultural produce by smallholder farmers. There is currently limited effective demand for inputs such as improved seed varieties and fertilizers, primarily because of the generally limited cash economies for the purchase of goods at markets in the CAs.

If agricultural inputs (broader seed varieties, fertilisers and pesticides) were more widely traded, there is little doubt that agricultural productivity in the CAs would be boosted significantly. One of the aims of this Project component is therefore to establish Agribusiness Dealerships situated in communities, and linked to an agribusiness information network, training workshops and agricultural and technical extension services (through Agritex).

A major aim of the Project is to test methods that will help to establish viable and profitable Agribusiness Dealerships at strategic locations in target communities. These dealers will need training, information and other assistance during the initial stages to determine if adequate demand can be generated to make an Agribusiness Dealer Network a viable option.

The effectiveness of community based dealers will also be enhanced through training workshops to be organised and implemented in cooperation with African Center for Fertiliser Development (ACFD) with headquarters in Harare.

Through participatory community-based research into available and potential markets for irrigated horticulture crops, an agricultural and marketing strategy will be developed by participating farmers in conjunction with assistance from Agritex, CARE field staff and research stations (notably the ACFD).

One of the main project objectives is to demonstrate ways and means of increasing household incomes in the CAs, especially among poorer smallholder farmers. Household gardens contribute to cash incomes (in addition to food security). Furthermore, outplanting of various fruit trees, addition of fish to dams, growing of seed, and the management of these resources to increase economic security is being pursued.

This component will aim to optimize "value added" cash crop production, increasing household incomes thereby enhancing household food and livelihood security.

8. PROJECT DURATION

It is envisaged that the project will operate for a period of five years, starting in July 1998 and ending in July 2003, subject to Section 1 para 10.

9. SUMMARY OF ROLES

A detailed description of the roles and responsibilities of the implementing and coordinating partners forms part of Section II. However the objective of this paragraph is to provide an overview of the roles and responsibilities that will from the basis for implementation of this project.

9.1 Role of Government Department/Agencies:

This project addresses GOZ priorities i.e i) geographic (CAs in regions IV and V) and ii) programmatic priority areas (Irrigation and water management, environment, rural development, landuse). These priorities cut across several line ministries/agencies, therefore MLGRUD will be responsible for coordination of the provincial and district based representatives of the various line ministries. Coordination and monitoring will be achieved through regular meetings at the provincial and district level. This project will be included in the large strategic plans for the development of the respective provinces.

The line ministries/agencies will provide technical assistance and training as described in Section II to facilitate implementation of the project.

The Government will exempt from sales tax, the purchase of all materials, capital and operational that is procured for this project. A sales tax number will be provided to CARE Zimbabwe to facilitate the procurement of materials for this purpose.

9.2 Role of CARE

CARE envisages to source and provide resources to communicate to rehabilitate the selected dams. The resources will include training, community capacity building, rehabilitation tools and materials, monitoring of progress, facilitation and networking on behalf of the communities. The total value of these resource is expected to be about Z$ 20,000,000 over a five year period.

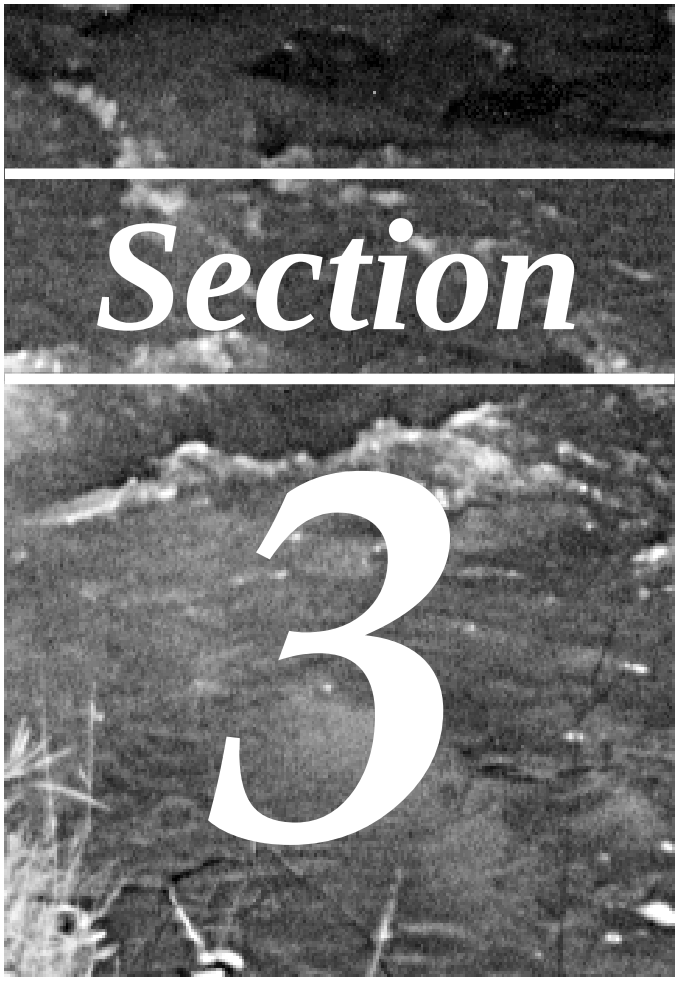
10. **FORCE MAJEURE**

10.1 In the event of unforeseen circumstances which may, for whatever reasons, force premature conclusion of the Project, signatories (below) recognize that agreements contained in this MOU may be terminated with 90 days notice by either signing party.

10.2 The implementation of this Project is contingent on the continuing availability of funding for materials and services from both parties. Furthermore, both parties recognise that continued funding depends on factors which make firm long term commitments inappropriate.

Signed on Behalf of the Coordinating Partners: -

For:	**For:**
Ministry of Local Government, Rural and Urban Development.	**CARE International In Zimbabwe**
Signature _____	**Signature** _____
Name _____	**Name** _____
Title _____	**Title** _____
Date _____	**Date** _____
Place _____	**Place** _____


Section
3

SECTION 3 SITE SELECTION

OBJECTIVE

To choose suitable sites using a participatory and defensible process that is based on clear technical, financial and social criteria.

STEPS

1. Identify and Map Potential Sites
2. Prepare for Preliminary Site Inspections
3. Conduct Preliminary Assessments
4. Prepare for Feasibility Studies
5. Conduct Technical and Economic Feasibility Studies
6. Conduct Social Feasibility Studies
7. Select Final Sites

SUMMARY OF THE PROCESS

Good site selection sets the stage for successful implementation. The site selection process for SDCRMP follows a phased approach, starting with a preliminary site inspection by CARE, technical screening by certified engineers, then detailed feasibility studies by CARE and its partners. At each stage, the team first identifies criteria that are used to select sites with the most potential for success. In this way, the most appropriate sites and communities will be involved; that is, those sites with the most potential to be rehabilitated and provide benefits, and those communities with the most potential to implement activities using a community-based approach to reap these benefits.

Feasibility studies look at the technical feasibility of dam and catchment rehabilitation, and the economic feasibility of activities given estimated costs and benefits. Participatory assessment exercises gather social feasibility information, using some of the same HLA tools as used during programme design. Exercises focus on historical analysis of the community's economy, infrastructure, development, politics and institutions. Once site selection studies are done, the community considers their participation, and must commit to a self-help approach to development. The final list of sites is provided to the RDC.

The site selection process involves government and NGOs from the start, developing working relationships with these partners and encouraging their support for CARE's activities on the ground. Partners provide lists of potential sites as the first step in site selection, and participate in feasibility studies to select final sites for implementation.

SECTION 3 DETAILED OVERVIEW

Step 1 Identify and map potential sites
- Request information from partners
- Collect relevant maps
- Map potential sites

Step 2 Prepare for preliminary site inspections
- Develop and/or review inspection criteria
- Prepare inspection tools
- Conduct pre-training and pre-testing exercises
- Notify authorities of timing for inspection

Step 3 Conduct preliminary assessments
- Conduct a preliminary site inspection
- Conduct a technical screening of identified sites

Step 4 Prepare for feasibility studies
- Develop and/or review criteria
- Prepare feasibility study tools

Step 5 Conduct technical and economic feasibility studies
- Conduct the technical and financial feasibility study
- Prepare the economic feasibility study

Step 6 Conduct social feasibility studies
- Form feasibility study teams
- Schedule meetings and field visits
- Hold an orientation and pre-testing workshop
- Conduct rapid household livelihood assessments

Step 7 Select final sites
- Contact local leaders and partners
- Hold a meeting to discuss programme principles
- Notify government and other partners
- Map final sites

IDENTIFY AND MAP POTENTIAL SITES

Potential sites for rehabilitation are identified in collaboration with government and other partners, to encourage their support for the programme.

REQUEST INFORMATION FROM PARTNERS

During the inception workshop (see Section 2), CARE requests a list of potential dam sites from relevant government agencies (e.g., Agritex, DDF, Department of Water, etc.). These sites should meet the following criteria:

- Small to medium-size dams (40-250 m^3)
- Potential for raising or rehabilitating the dam wall
- Located in Communal Areas
- Serving a minimum of 120 households
- Accessible site
- Available land for irrigation
- Catchment less than 14km^2
- Few homesteads in the catchment area

These criteria can change depending on the specific objectives of the programme (see Step 2). CARE also discusses possible sites with other CARE programmes operating in the area. Government agencies provide a map indicating the location of potential sites (if possible), and the name of the local extension worker. A master list of potential sites is compiled.

COLLECT RELEVANT MAPS

Once potential sites are identified, they are mapped. Ideally, mapping is done at a reasonable scale (e.g., 1:50,000) to allow enough detail to find the dam in the field. Maps are available from Map Survey or the Surveyor General's office.

MAP POTENTIAL SITES

Wherever possible, potential sites are mapped before preliminary site inspections. A map of potential sites helps plan the logistics of field visits. The location of some potential sites may not be provided on a map or with co-ordinates; in such cases, the nearest business centre or other landmark can be mapped.

The purchase of an inexpensive hand-held GPS can help the mapping process and allows for computer generated maps, which can be used for reports and presentations. CARE uses ArcView to map potential and candidate dam sites.

PREPARE FOR PRELIMINARY SITE INSPECTIONS

The location and overall condition of potential dam sites is confirmed, to develop a short list of candidate sites for more detailed analysis.

DEVELOP AND/OR REVIEW INSPECTION CRITERIA

The most important criteria for successful sites are first identified. The size and condition of the dam is critical; however, success also depends on catchment condition, irrigation options, and the size and situation of the community, all of which are also considered at this stage. Preliminary inspection criteria look at:

- Dam size
- Condition of the dam and potential for improvements
- Catchment size
- Present catchment uses and practices
- Availability and suitability of land for irrigation
- Accessibility (for working purposes)
- Number of direct/indirect beneficiaries
- Community conflicts and development history

If other projects are working in the community, either now or in the near future, their site criteria should be included as part of the preliminary site inspection.

PREPARE INSPECTION TOOLS

Checklists are prepared based on chosen inspection criteria. These checklists should be a tool that Field Officers can use easily and quickly (see Annex 3.1).

CONDUCT PRE-TRAINING AND PRE-TESTING EXERCISES

Before inspections begin, the team holds a 1 or 2-day workshop to review the purpose of the inspections, develop a schedule and deadlines for recommendations, and do at least one field visit together to pre-test tools. During the pre-test, each Field Officer completes a checklist independently. Results and recommendations are compared as a team afterwards. After this exercise, inspection checklists and schedules can be finalised.

NOTIFY AUTHORITIES OF TIMING FOR INSPECTION

After the inspection schedule is available, RDCs and local extension workers at each site are notified of the time and purpose of upcoming visits. CARE is simply assessing the condition of the dam —no promises should be made and no community meeting should be held.

Step 3

CONDUCT PRELIMINARY ASSESSMENTS

During preliminary assessments, the Field Officer confirms the location of the site, and observes the condition of physical resources, and a certified engineer checks rehabilitation potential. Candidate sites are recommended.

CONDUCT A PRELIMINARY SITE INSPECTION

The Field Officer does the preliminary site inspection alone, sometimes with a local extension worker. If anybody asks questions, it is explained that CARE is making a preliminary assessment of the dam condition only. Dam location is confirmed on a map. Observations of the dam, the dam wall, any water use systems, and the surrounding catchment area are made. RDC or local extension workers are asked about the development history of the community and whether they are aware of any major social problems. The checklist should be completed on-site, so that details are not forgotten.

In general, de-selecting a potential dam site is obvious —siltation or excessive damage is apparent, and the cost of rehabilitation is likely too high for the anticipated benefits. In those cases where a Field Officer is uncertain, follow-up site visits are conducted with the Programme Manager or technical advisors. From the preliminary site inspection, a short list of sites for further investigation is compiled.

CONDUCT A TECHNICAL SCREENING OF IDENTIFIED SITES

After the preliminary inspection, a certified engineer visits the short list of sites to do a preliminary technical screening. The purpose of this assessment is to determine if cost-efficient rehabilitation is possible. From the total number of potential sites originally identified for inspection, approximately 45% are usually de-selected due to excessive cost. A final list of candidate sites is prepared.

Step 4

PREPARE FOR FEASIBILITY STUDIES

Feasibility studies involving all partners are used to determine more rigorously the suitability of a site to the programme.

DEVELOP AND/OR REVIEW CRITERIA

Agreeing on standards at the start minimises any outside influences affecting decision making, to ensure sites with the most potential for success are chosen. Selection criteria for feasibility studies are similar to criteria used during preliminary assessments, but more detailed information is gathered at this stage, including:

- The physical condition of the dam (Can dam capacity be increased? Is it less than 30% silted? What is the condition of the dam wall? How is the dam used?)
- The physical condition of the catchment area (How large is the catchment area? How is land used? Are degraded areas suited to rehabilitation?)
- The logistics of operations (Is the site accessible? How many other sites are nearby? What local resources are available?)
- The cost of repair or rehabilitation (Is the cost less than the average amount estimated in the proposed budget?)
- The financial viability (What is the expected life of the dam? How much land is available for irrigation? What benefits are likely from gardens, fishing, etc.?)
- The political climate (What is the local history? Have there been any conflicts?)
- The community commitment (Has the community been involved in development projects? Will they do "self-help" works? Is the community cohesive?)
- The social benefits (How many direct beneficiaries? How many indirect beneficiaries? How food secure is the community?)

PREPARE FEASIBILITY STUDY TOOLS

Tools to guide feasibility studies are developed from feasibility criteria. Different kinds of tools need to be developed depending on the information being gathered. For technical information, a survey or checklist is a useful tool. For social information, participatory rural appraisal tools are used. See Step 6 for examples.

CONDUCT TECHNICAL AND ECONOMIC FEASIBILITY STUDIES

Certified engineers visit candidate dam sites with CARE to complete more detailed technical and financial feasibility studies. It is important to do these assessments before social assessments, in case dam rehabilitation will be too difficult or too costly.

CONDUCT THE TECHNICAL AND FINANCIAL FEASIBILITY STUDY

Certified engineers, Field Officers, and local extension staff (as needed) conduct technical feasibility studies at all candidate sites. The engineer assesses the technical integrity and potential capacity of the dam, and estimates the materials required for repair (see form in Annex 3.2). This information is used to estimate costs and financial feasibility. This feasibility team discusses issues with local leaders at the site when additional information is needed.

Certified engineers from private contracting firms have been used with more success than government agencies. CARE has found the experience of private firms in Zimbabwe is better than (often less experienced) engineers working in government.

The technical feasibility study also looks at the catchment area, including potential for irrigation and risks of erosion. Some of CARE's partners have developed tools for more detailed analysis (see Annex 3.3). Potential environmental impacts (positive and negative) are evaluated[1] .

PREPARE THE ECONOMIC FEASIBILITY STUDY

Using information provided by the technical and financial feasibility study, the Programme Manager (with input as needed) estimates the overall economic viability of the programme. The costs of dam repair and catchment protection (e.g., building materials, transport, contractor costs, etc.) are compared to the benefits (e.g., food supply, sales from gardens, etc.). This study focuses on estimated real costs and quantifiable benefits over a 20-year period (i.e., the expected life of the dam). With a cost-benefit spreadsheet, it is determined whether the investment will yield sufficient profit, according to acceptable economic margins (see example in Annex 3.4). This exercise allows CARE to show the donor if money is being well spent or greater impact could be realised using it differently. In post-programme evaluations, other less quantifiable benefits are assessed (see Section 13).

From the technical and economic feasibility study, a short list of final candidate sites to visit for social feasibility studies is prepared.

Most site de-selections are done during preliminary inspections and technical studies. Social feasibility studies are only completed at the number of sites for which funding is available. Otherwise, when extensive assessments are done, expectations are built within the community. If some of these sites do not meet social feasibility criteria, additional sites can be visited later on.

[1] Some donors have required an environmental impact assessment of the SDCRMP (at the programme level), to predict and mitigate the environmental effects of construction and operational activities. The Government of Zimbabwe also has EIA guidelines that mostly apply to large-scale construction and resource use projects.

CONDUCT SOCIAL FEASIBILITY STUDIES

CARE Field Officers, government extension workers and other partners visit the candidate sites as a team to complete social feasibility studies.

FORM FEASIBILITY STUDY TEAMS

A social feasibility team is organised for each district under investigation. Participation in feasibility studies is requested during inception workshops (see Section 2); members of the DPCC are responsible for notifying extension workers in their department of upcoming feasibility studies with CARE. Teams generally include extension workers for the site (e.g., Agritex, Vet Services, Village Community Worker, Environmental Health Technician, etc.), and the RDC project officer. Field Officers work together on feasibility teams, but the lead Field Officer for the district is responsible for overall co-ordination of the district team.

SCHEDULE MEETINGS AND FIELD VISITS

A meeting to train all feasibility teams and pre-test feasibility tools is scheduled by the Programme Manager. Timing may be discussed at the inception workshop. Before the workshop begins, all team members should be provided with the short list and map of final candidate sites, and a copy of the selection criteria and study tools.

The field visit schedule should be made well in advance by the lead Field Officer, so that the community can be notified. Local traditional leaders and/or extension workers in each community are contacted to arrange a meeting time and place. Local leaders should inform the community-at-large, and any interested people should be invited to attend. Social feasibility studies generally take two days in each community.

HOLD AN ORIENTATION AND PRE-TESTING WORKSHOP

Before feasibility studies begin, a 3-day training workshop is held, chaired by the Programme Manager. On Day 1, the objectives of the exercise, the type of information to be collected, and the roles and responsibilities of each team member are reviewed. On Day 2, a nearby “sample” community is visited by all of teams, and feasibility study tools are pre-tested. (Note: This community should be notified beforehand). Parallel exercises are done and each team member familiarises himself/herself with the assessment methods. On Day 3 (back at the training centre), information is collected and analysed, and each team reports back. Any problems are discussed.

CARE originally did social feasibility studies to assess community interest, commitment and cohesion. With programme orientation moving towards an integrated HLS approach, doing rapid HLAs in each community gathers this same information, and more. Rapid HLAs follow the same methodology as HLAs done during programme design, but are done in each community and focus more on the historical analysis of economy, infrastructure, development, politics and institutions.

CONDUCT RAPID HOUSEHOLD LIVELIHOOD ASSESSMENTS (HLAS)

HLAs help to better understand household livelihoods and community-level relationships, and promote a participatory process from the start. From the outset, underlying poverty issues such as access, equity, and gender are discussed alongside the usual development priorities such as lack of water or draught animal power. The rapid HLA done at this stage focuses on the historical background of the community (resources, institutions, and economic activity). A general analysis of wealth categories and perceived problems in the community is done, but is examined in more detail once the community and CARE commit to working together (see Section 4).

Members of the feasibility team facilitate different HLA exercises at the same time, including:

- Mapping exercise: to identify environmental and infrastructure changes in the area (this information also supports the technical feasibility study)
- Institutional analysis: to identify the type of institutions that operate in the area, their roles, and their contribution to the community
- Economic activity analysis: to identify existing economic activities and participants in those activities
- Livelihood profiles: to determine community indicators of wealth, and the wealth categories of the community
- Problem analysis: to discuss problems and solutions, as identified by the community, and resources needed. The willingness of the community to participate in self-help development may emerge from this analysis.

Each group presents its work at the end of the session. The feasibility team collects information and prepares a written report after the field visit. The exercises included in the rapid HLA are summarised in Annex 3.5.

The community should understand that this work is being done for assessment purposes only, to see if the social environment is suitable —no promises should be made. Usually 5% of sites are rejected for social reasons, namely a lack of cohesion. Often social de-selection occurs because the community is not homogenous, particularly if they straddle administrative or traditional authority boundaries.

SELECT FINAL SITES

Once all assessments are done, a final list of sites is available. The team discusses programme principles with local leaders and the community, and gets their commitment to participate. A list of final sites is shared with partners.

CONTACT LOCAL LEADERS AND PARTNERS

CARE needs to discuss programme principles with the community at final selected sites and get their commitment to participate. The Field Officer contacts local leaders, including chiefs, councillors, kraal heads and relevant headmen to arrange a meeting time and place. Leaders are responsible for informing the community. Members of the district feasibility team, and any other relevant partners (especially local extension workers), are invited to attend.

HOLD A MEETING TO DISCUSS PROGRAMME PRINCIPLES

At this meeting the community is told that CARE would like to work with them. The Programme Manager and Field Officer explain activities and the community's roles, responsibilities and contributions. The community must commit to a self-help approach to implementation; sometimes they are required to gather some local resources to demonstrate this commitment.

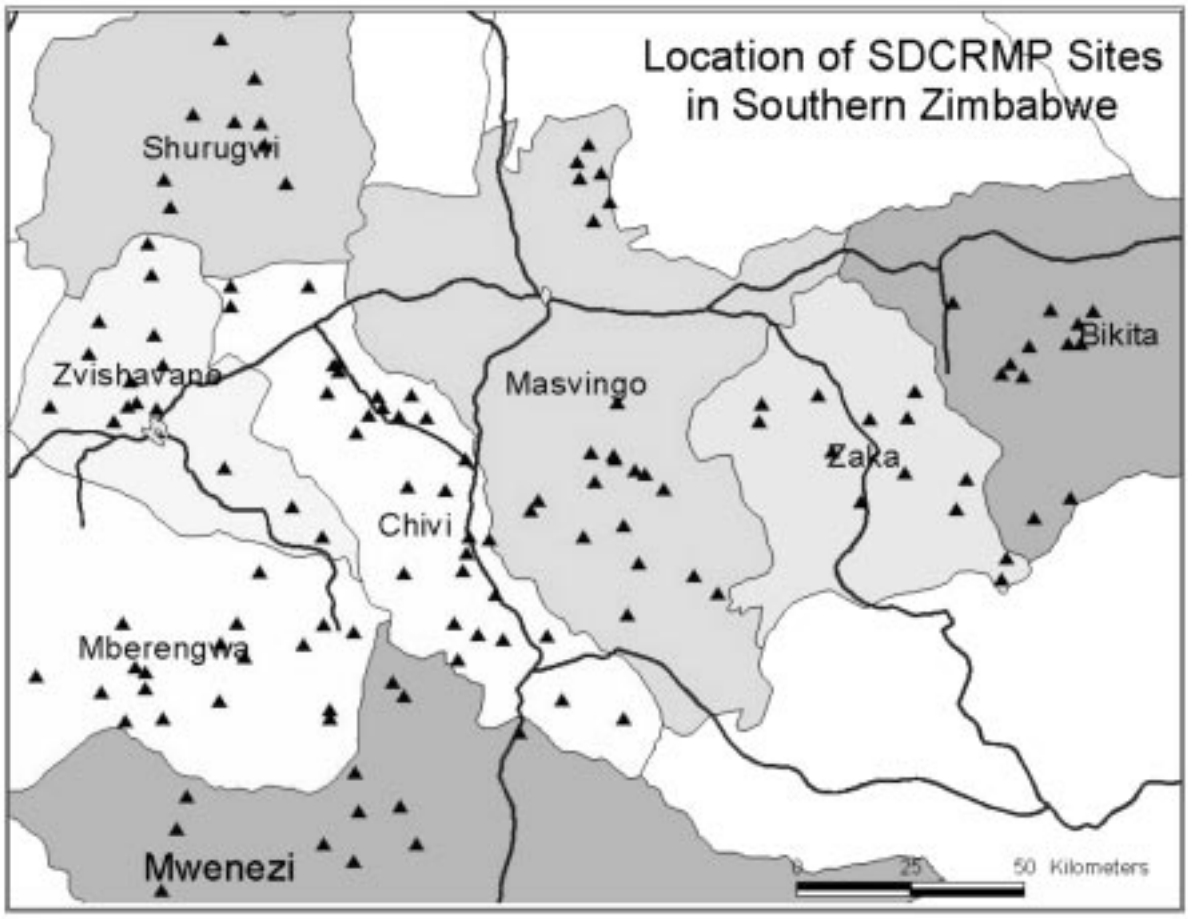
Sometimes there are participation problems —in particular, with late joiners or drop-outs. This is often because people did not anticipate either the real costs of rehabilitation work, or the real benefits of garden production. The community needs to consider these costs and benefits before agreeing to participate. In particular, the possible size of garden plots and amount of community irrigation contributions need to be discussed. Usually, any household that commits and takes part in rehabilitation work is guaranteed garden space. If there are many participants, and garden plot size is small, some households may find they put in more effort than they are getting out, and decide to drop-out. Successful gardens may face the problem of late-joiners, people who may not have believed the programme would be successful. These issues should be discussed early on.

NOTIFY GOVERNMENT AND OTHER PARTNERS

Sites that have passed feasibility studies and received community commitment are presented to a full RDC council meeting for adoption. Results of all studies are kept on file for justification as to selection or de-listing, and for reference should additional funds be made available. The final list of sites should be shared with members of feasibility teams. Other government representatives not yet involved, and any NGOs (including other CARE programmes) that are working in and around the sites should also be notified.

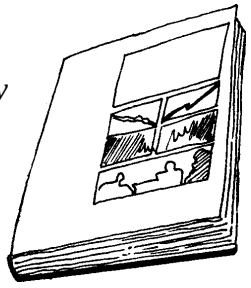
MAP FINAL SITES

Maps should be revised to identify the final selected sites. The location of any potential sites should still be recorded, along with reasons for de-selecting, to facilitate any future site selection processes (see comments on mapping under Step 1).



For further information related to site selection, please see:

- *HR Wallingford. Estimating Risk of Soil Erosion Using Key Catchment Characteristics*
- *Zirebwa et al. Guidelines for Technical Appraisal of Small Dam Sites*



Section 3 Annex

SDCRMP PRELIMINARY SITE INSPECTION

Date of Inspection: .....

Name of Field Officer: .....

Dam:

Condition of dam wall:

.....

.....

Any apparent leakages (please describe):

.....

.....

Water level in the dam (distance below spillway):

.....

Estimated dam capacity:

.....

Siltation level (please estimate and describe):

.....

.....

Availability of outlet pipe or other irrigation works:

.....

Condition of the dam spillway:

.....

.....

Potential to raise the dam spillway:

.....

Estimated bill of quantities:

.....

Irrigation:

Potential irrigable land in hectares (downstream/upstream):

.....

Suitability of soil type for horticultural production:

.....

Current irrigation practices (indicate fencing type):

.....

.....

Catchment Area:

Current conservation practices:

.....

.....

Land use practices in catchment area:

.....

.....

Recommendation:

Suitability to SDCRMP:

.....

.....

Follow-up actions required:

.....

.....

Any other comments:

.....

.....

Programme Manager Comments:

.....

.....

Date: ..... Approval .....

Sector Co-ordinator Comments:

.....

.....

Date: ..... Approval .....

Annex 3.2 Technical/financial feasibility form

SDCRMP TECHNICAL & FINANCIAL FEASIBILITY

Dam:

.....

Community name:

.....

District:

.....

Inspection date:

.....

Map Reference:

.....

Grid Reference:

.....

Describe location:

.....

.....

Nearest market ..... km Nearest health centre ..... km

Dam

Estimated capacity (ML) ..... [Original design ..... ML]

Estimated depth to F.S.L (m) .....

Estimated water level (m) ..... [Original design ..... m]

Maximum width (at widest point): .....

Estimated siltation (%) .....

Probability of filling from empty (%) .....

Estimated life of dam .....

Do plans exist? (Yes/No) If yes attach copies.

History (how the dam was constructed, additional work since construction):

.....

Current condition (be specific):

.....

.....

Dam Wall Type .....

Estimated height (m) .....

Estimated length (m) .....

Estimated width (at base) (m) .....

Estimated spillway width (m) .....

Spillway freeboard (m) .....

Is the dam wall protected or fenced? (explain):

.....

Current condition (be specific):

.....

.....

Potential for raising the dam wall

.....

.....

Catchment

Hydro Zone ..... C.V. (%) .....

M.A.R. (mm) ..... Gross M.A.R. (ML) .....

Max. Probable Flood (m^3/s) .....

Design Flood/100yr (m^3/s) .....

Catchment area (km^2)

Estimated area of catchment under cultivation (%) .....

Estimated area under grazing (%) .....

Estimated area forested (%) .....

Number of households in catchment .....

Current condition (be specific):

.....

.....

Given intensity of use in the catchment area, what optimal area is recommended for protection: ..... (km^2) or

..... (m from edge of dam)

Given local conditions do you think this will be: easy/moderate/difficult to fully and sustainably protect (explain):

.....

What soil conservation techniques are used in the catchment area? How successful are they? Are they maintained? (explain):

.....

What silt entrapment techniques (i.e. silt traps) have been used? (explain):

.....

Does topography lend itself to catchment protection?

.....

Potential for catchment rehabilitation

.....

.....

.....

Irrigation

Has this dam been used for crop irrigation? What method has been used (mechanical, gravity, bucket, etc.) (explain): .....

.....

Describe existing irrigation system design and present conditions:

.....

.....

What area is currently under irrigation? ..... ha)

How are plots allocated? (explain) .....

.....

Who maintains the irrigation system? .....

.....

Has an irrigation fee been charged? .....

.....

Potential for gravity feed irrigation

.....

.....

What area is potentially under irrigation? ..... ha)

Is the agricultural quality of potential irrigated land: good/moderate/fair?

.....

.....

Is there current potential to expand the area under cultivation?

.....

.....

Are there land use conflicts in these potential irrigation areas?

.....

.....

COMMENTS AND RECOMMENDATIONS

.....

.....

.....

ESTIMATED BILL OF QUANTITIES

.....

.....

.....

RESOURCES REQUIRED FOR REHABILITATION WORK

.....

.....

.....

ENVIRONMENT IMPACTS

.....

.....

.....

Who participated in providing information for this survey?

.....

.....

....

Signature of CARE Field Officer Date

....

Signature of Certified Engineer Date

Programme Manager Comments:

.....

Date ..... Approval .....

Sector Co-ordinator Comments:

.....

Date ..... Approval .....

Catchment Characteristics		Extreme		High		Normal		Low	
1)	**Relief**	Steep: average slope >30%	40	Hilly (10-30%), hills cover >50% of catchment	30	Rolling (5-10%), hills cover <50% of catchment	20	Relatively flat land (0-5%)	10
2)	**Soil Type & Drainage**	No effective soil cover; either rock or thin shallow soils	40	Poorly drained compacted soils; much ponding on soil surface after heavy rains	30	Moderately well drained medium-textured soils; some ponding on soil surface after heavy rain	20	Well drained coarse-textured soils; little ponding on soil surface after heavy rain	10
3 a)	**Vegetation Condition over Whole Catchment**	Little effective plant cover, ground bare or very sparse cover over 80% of catchment	40	Fair cover: >50% of catchment is cultivated with annual crops;	15	Good cover: <50% of catchment is cultivated with annual crops;	10	Excellent cover: <20% of catchment is cultivated with annual crops;	5
3 b)				<30% of catchment is under good grass cover or protected forest cover	15	30-60% of catchment is under good grassland or protected forest cover	10	>60% of catchment is under well-maintained grassland and/or protected forest cover	5
4)	**Signs of Soil Erosion**	Many actively eroding gullies (dongas) draining directly into dam and/or watercourses; active undercutting of riverbanks along main watercourses	80	Some actively eroding gullies (dongas) draining directly into dam and/or watercourses; moderate undercutting of riverbanks along main watercourses	60	Few actively eroding gullies (dongas) draining directly into dam and/or watercourses; little undercutting of riverbanks along main watercourses	20	No actively eroding gullies (dongas) draining directly into dam and/or watercourses; no undercutting of riverbanks along main watercourses	0
5 a)	**Vegetation Condition Along Watercourses**	Bare soil; very little vegetation cover	40	Poor grassland along riverbank	15	Moderately well protected grassland along riverbank	10	Well protected grassland along riverbank	5
5 b)				Very few or no trees along riverbank	15	Some trees along riverbank	10	Many trees along riverbank	5
6)	**Surface Water Storage in Catchment (trapping sediment)**	Negligible; no pools in watercourses, no marshes or dambos (vleis)	40	Low; few pools in watercourses, few marshes or dambos (vleis)	30	Medium; some pools in watercourses, some marshes or dambos (vleis)	20	High; extensive pools in watercourses, extensive marshes or dambos (vleis)	10
7)	**Village Population Density (people/km²)**	Densely populated	40	Moderately densely populated	30	Normal/average population density	20	Sparsely populated	10

***EXAMPLE** - Select the most appropriate factor in each column and add them together* **Catchment Erosion Factor =**

e.g. rolling relief (20), well-drained soils (10), <50% of catchment is cultivated (10), <30% of catchment has good grass cover (15), many dongas (80), moderately good grassland (10), some trees along watercourse (10) and few pools in watercourse, few vleis (30), normal population density (20)

Catchment Erosion Factor = 20+10+10+15+80+10+10+30+20 = 205

SDCRMP - Economic Appraisal of Dam Site (Expansion Phase II)

US$

Description	Calculation	Unit	1 1998	2 1999	3 2000	4 2001	5 2002	6 2003	7 2004	8 2005	10 2007	11 2008	13 2010	14 2011	21 2018	21 Total
Sunken Investment			6667													6667
CARE	7048		1762	1762	1762	1762										7048
Community	42609		10652	10652	10652	10652										42609
Government / Others	373		93	93	93	93										373
Capital Investment			19175	12508	12508	12508										56697
Expect life of the Dam	30 years															
Depreciation	3.3		759	759	759	759	759	759	759	759	759	759	759	759	759	15939
O & M costs			106	210	315	421	421	421	421	421	421	421	421	421	421	8209
Total Costs			20040	13477	13582	13688	1180	1180	1180	1180	1180	1180	1180	1180	1180	80845
Area Cultivated	Ha		1	3	3	3	3	3	3	3	3	3	3	3	3	
Income from gardens	Cash Sales	20%	1006	2012	2072	2135	2199	2265	2332	2402	2549	2625	2785	2869	3528	55069
	Barter	10%	503	1006	1036	1067	1099	1132	1166	1201	1274	1313	1393	1434	1764	27535
	Consumed	70%	3522	10566	10883	11209	11546	11892	12249	12616	13385	13786	14626	15065	18528	287434
Sub- Total			5031	13584	13992	14411	14844	15289	15748	16220	17208	17724	18803	19368	23820	370038
Gardening costs	Land	70	70	210	210	210	210	210	210	210	210	210	210	210	210	4270
	Labour	240	240	720	759	775	790	806	822	838	872	890	926	944	1,084	18302
	Manure	230	230	690	704	718	732	747	762	777	808	825	858	875	1005	16997
	Seeds	20	20	60	61	62	64	65	66	68	70	72	75	76	87	1476
	Chemicals	1.5	2	5	5	5	5	5	5	5	5	5	6	6	6	112
	Equipment	10	10	30	31	31	32	32	33	34	35	36	37	38	44	739
Sub - Total		571.5	572	1715	1770	1801	1833	1865	1898	1932	2000	2038	2112	2149	2436	41896
Gross Margins			4459	11869	12222	12610	13011	13424	13850	14288	15208	15686	16691	17219	21384	328140
Less Marketing Costs	Labour		798	800	252	800	800	800	800	800	800	800	800	800	800	16250
	Transport		154	154	71	154	154	154	154	154	154	154	154	154	154	3151
Sub - Total			952	954	323	954	954	954	954	954	954	954	954	954	954	19401
Livestock	LU		100	115	132	152	175	201	231	266	321	354	428	471	695	
		5 Per LU	500	575	661	760	875	1006	1157	1330	1610	1770	2142	2356	3474	
Trees	Numbers						364	400	440	485	586	616	679	713	749	10705
Fishing			30	40	50	60	60	60	60	60	60	60	70	70	70	1290
Total Benefits			4037	11530	12610	12476	13356	13896	14553	15209	16510	17178	18628	19404	24723	359999
Incremental Benefits			-16003	-1947	-972	-1211	12176	12756	13373	14029	15330	15998	17448	18224	23543	279144

Sunken Investment Calculations	
Current costs @current Z $	120,000
Exchange rate	18.00
Current US $ costs	6667
Useful life of dam -Years	30
Age of dam	7
Remaining useful life	23
Sunken Investment	6667

CARE Contribution Calculations		
Materials	Qty	Amount
Cement		15180
Poles		7850
Wire		34918
Tying wire		2380
Gates		3990
Pipes		0
Pump		29024
Tractor hire		29000
Lorry hire		514
W/barrows		3752
Hammers		339
Shovels		776
Wire pullers		141
Diggers		0
Total Zimb		126864
Exchange rate		18.00
US Dollar		7048

Community Contribution	
Labour	761,760
Materials	5200
Sub total	766960
Exchange	18.00
US Dollar	42609
Government of Zimbabwe	
	4200
	2520
Total Zimb	6720
Exchange	18.00
US Dollar	373

Per Capita Cost Analysis	
1 Population - direct	1380
2 Population - Indirect	360
3 Population - total	1740
4 Total project outlay	50030
5 Total communit- outlay	42609
6 Total CARE -outlay	7048
7 Per capita cost -Direct	36.25
8 Per capita cost -total	28.75
9 Per-capita cost -CARE/direct	5.11

Economic Analysis			
2%	$192,842	NPV	$192,842
6%	$112,441		
		IRR	32%
			32%

Annex 3.5 Rapid household livelihood assessment exercises

Mapping and historical analysis:
The mapping exercise is carried out for the purposes of identifying environmental and infrastructure changes in the area. The community draws maps of their area before the dam was built, and after it was built. Maps should cover the larger social catchment. A third map of the current dam status and existing infrastructure in the social catchment is also drawn. The community identifies physical resources that contribute to their livelihood security and notes any changes to these resources with time.

- Explain the objectives of the exercise
- Divide the community into 3 groups
- Groups select their leaders
- Each group should draw all 3 of the maps, or each group should draw one of the maps
- List trends or changes noted

Institutional analysis:
The institutional analysis is carried out to identify the type of institutions that operate in the social catchment, the roles of each, and their contribution to livelihood security of the community.

- Explain the objectives of the exercise
- Draw circles with the household in the middle
- Participants brainstorm on a list of institutions in the community, including informal groups
- Develop themes such as marketing, health, leadership, etc.
- List the institutions under each theme
- Rank the institutions starting with those closest to the community, for each theme, and draw as circles on the chart
- Help identify gaps

Economic activity analysis:
The community carries out certain economic activities as a means of achieving livelihood security. The analysis is carried out to try and identify existing economic activities, and the roles of each social segment in the implementation of these activities.

- Explain the objectives of the exercise
- Divide the community into 4 groups of women, men, mixed and youth
- Participants in each group brainstorm on all of the economic activities in the area
- List all the economic activities in the area
- Identify the roles and responsibilities of men, women and children in each activity, how much time they spend on the activity, the seasonality of activities, and determine the level of involvement in that activity for the whole community (e.g., 100% are involved in farming). Counters, seasonal calendars and 24-hour wheels can be used to gather this information from the group.

Livelihood profiles:
Each community has a distinct social structure. Wealth measurement is the common theme that segments the community. The objective of most developmental interventions is to improve the livelihood status and significantly change the wealth category of the targeted communities. The profiles are carried out to determine community indicators of wealth, wealth categories and the portion of the community in each category.

- Explain the objectives of the exercise
- Divide the community into 3 groups of women, men, and mixed
- Develop group indicators of wealth (e.g., livestock ownership, incomes, education, etc.)
- Agree on the different wealth categories (rich, average, poor, very poor), and the profile of each category based on the indicators
- Facilitate a count of the number of households in each category. Ensure that the poor are not offended by the exercise. Ask the community how they would want to do this (e.g., secret vote).

Sentinel households/cluster analysis:
Individuals in the different wealth categories are asked to volunteer to be sentinel households, to validate information from the livelihood profiles and develop a more detailed understanding of the livelihood strategies of a range of households. These sentinel households are also monitored on an on-going basis, as a way of monitoring and evaluating change at the household level. Household interviews are carried out using a cluster analysis tool. The cluster analysis is designed to map the individuals in the household, and their lives. The cluster analysis diagram maps information about:

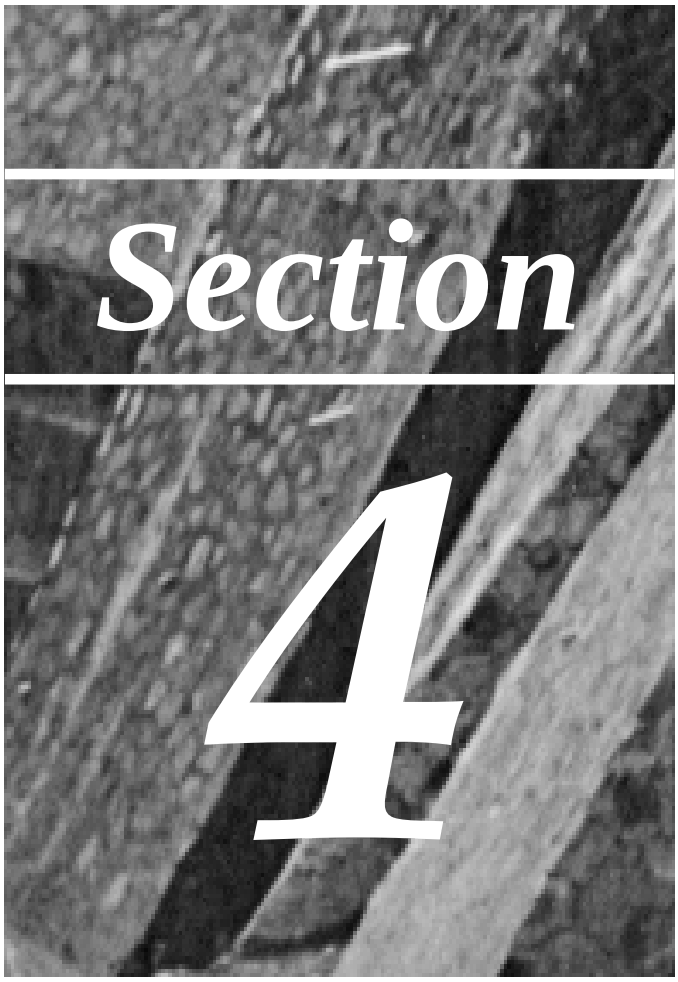
- Each individual, including previous activities, education level, marital status, and number of children
- Economic activities, assets, levels of production and profitability of different activities, and marketing strategies
- Exchanges of labour, finances and resources that occur both between household members and their extended family, and other community members
- Consumption activities, including consumption of food and money, and use of local services
- Coping strategies during difficult times

Problem analysis and prioritisation:
This exercise is carried out to identify the problems and constraints faced by households in the community.

- Explain the objectives of the exercise
- Divide the community into groups representing the different wealth categories (this should be done in a sensitive manner – e.g., only forming 2 groups of "better-off" and "poorer")
- Brainstorm all of the problems faced by households in that wealth category (use themes to categorise problems, if helpful)
- List and rank these problems, as a way to prioritise them
- Work with the participants to show linkages between these problems, and the differences between causes and consequences (e.g., problem tree)

Visioning:
Based on the results of the problem analysis, a visioning exercise is done to help communities see how they can solve the problems they are facing. This exercise requires participants to appreciate what they already have, imagine what they could have, and identify what needs to change from the present reality to achieve their vision for the future. These changes become actions for communities and households to take.

- Explain the objectives of the exercise
- Divide the community into groups representing the different wealth categories (this should be done in a sensitive manner – e.g., only forming 2 groups of "better-off" and "poorer")
- In each group, have participants list the opportunities in their community, imagine how the community might look in 5 years (this can be done individually and in groups), compare the vision to the present reality, and identify what needs to happen to achieve their vision (including what the community can do themselves, and what inputs they need from outside sources)
- Using maps, each group should develop a community vision, what they want their community to look like in the near future
- Develop community-based indicators for success from these visions


Section
4

SECTION 4

MOBILISING THE COMMUNTIY

OBJECTIVE

To begin organising and mobilising the community so they are able to take an active lead in implementation through responsible and accountable local management structures.

STEPS

1. Introduce the Community to the Programme
2. Identify Community Priorities and Plans
3. Establish a Local Technical Advisory Committee
4. Develop Management Structures
5. Select Committees and Community Mobiliser (s)

SUMMARY OF THE PROCESS:

Once sites are selected, CARE formally introduces the programme and more site-specific assessments and plans are done. From this platform, community mobilisation work begins.

For programme success and sustainability, the community must be committed to contributing to rehabilitation works and subsequently managing and maintaining their resources. A Social Contract is signed to formalise this commitment, and community management structures are created to ensure this commitment is met. A community's sense of ownership over development activities is achieved only when decision making is internalised within local organisations that are accepted and which represent their interests. Field Officers facilitate selection of Committees and Community Mobilisers early on; these are the key contacts for CARE and its partners. The process of establishing community management structures follows Module 1 of the "Community Resources Training Manual". Details on the topics and activities of the training sessions referred to in this section are found in this companion document. Strong leaders are needed for these positions; training sessions emphasise that the best leaders may not always be the most prominent people in the community. Committee members and Community Mobilisers need to be accepted and represent broad community interests, or they will not succeed.

Throughout implementation, CARE transfers information and decision-making and organisational skills to committees. Ultimately, the goal of this process is to break the community's dependency on outside agencies, and to make them realise that they have sufficient the resources and skills to define their problems and implement the right solutions. Through project committees, communities no longer see themselves as passive recipients or beneficiaries, but as decision makers, planners and implementers.

SECTION 4

DETAILED OVERVIEW

Step 1 Introduce the community to the programme
Hold a community orientation meeting
Discuss the Social Contract
Organise an exchange visit (optional)

Step 2 Identify community priorities and plans
Conduct more detailed assessments with the community as needed
Develop an activity plan with the community

Step 2 Establish a local Technical Advisory Committee

Step 3 Develop management structures
Sign the Social Contract
Review different management structures
Conduct a training session on community-based management

Step 4 Select committees and Community Mobiliser(s)
Conduct a training session on leadership concepts
Elect committees
Select Community Mobilisers

Step 1

INTRODUCE THE COMMUNITY TO THE PROGRAMME

Once sites are selected, SDCRMP concepts and activities are introduced to the community who live around and use the dam regularly and seasonally. The aim is to increase participants' knowledge, understanding and acceptance from the start.

HOLD A COMMUNITY ORIENTATION MEETING

A time is set with local leaders for a community orientation meeting; they are responsible for notifying the community-at-large. The Field Officer contacts relevant extension workers, including the RDC, Agritex, Department of Natural Resources, Forestry Commission, Environmental Health Technicians, Village Community Workers, and any other partners. Participants from other communities can also be invited to share their experiences. The content of the orientation meeting follows the "Community Resources Training Manual" —Module 1, Lesson A "Project Awareness"— which covers the following topics:

- Small Dam and Community Resources Management Programme
- CARE and project partners
- Community-management approach

Not everyone in the community may attend this meeting. People must decide how they will ensure all regular and seasonal users of the dam are informed about the programme. The community is left with this task (they may decide to hold their own meeting, or contact households individually). Special efforts are needed to inform vulnerable groups, as they are often short of time and energy to participate.

DISCUSS THE SOCIAL CONTRACT

In an effort to formally bind CARE, partners and the community and avoid conflicts over roles and responsibilities, a Social Contract is developed by CARE and the community (see Annex 4.1). The contract outlines the activities, from inception to completion, and clearly defines the role and contributions of the parties involved. The contract includes the amount of funds dedicated to materials, repairs, training, etc., as a means to offer transparency and limits to monies available. In the Social Contract, the community agrees to allocate land for the irrigated garden, and agrees to contribute financially to the irrigation system. If the community is provided with their own budget to manage, this budget is indicated.

ORGANISE AN EXCHANGE VISIT (OPTIONAL)

If possible, an exchange visit is organised to another (completed) small dam site. Exchange visits offer a chance to learn about the programme's successes and weaknesses from actual participants, and also allow communities to see improvements to dam, garden and catchment resources. Visits should involve households from different wealth categories.

IDENTIFY COMMUNITY PRIORITIES AND PLANS

More detailed analysis sets the stage and helps prioritise interventions.

CONDUCT MORE DETAILED ASSESSMENTS WITH THE COMMUNITY AS NEEDED[1]

At this point, detailed studies are done with participants to expand on information collected during the rapid HLA (see Section 3). Results provide more site-specific direction to activities and sequencing, as well as baseline information. In particular, exercises should focus on:

Institutional analysis: A more in-depth analysis of local institutions and leaders in the community identifies if there is a need to develop project committees, and what linkages these committees should make. Understanding these institutions and how well they represent the community is a precursor to defining local partnership arrangements.

Wealth ranking of all participants: Community-based criteria of wealth categories are refined, and participating households rank themselves in different categories. This information provides a baseline of household status. It also opens up discussion on how to ensure participation of vulnerable households.

Identification of sentinel households: Households in different wealth categories are identified for more in-depth study (see details under Monitoring and Evaluation, Section 13).

Problem identification and visions: The community reviews the problems identified during feasibility studies, refining as needed. The objective is to discuss visions of the future, and identify solutions that feed into their activity plan. Household constraints differ between wealth categories; therefore, problem analysis should be done for different categories. Linkages can be developed to address problems outside the programme's objectives.

DEVELOP AN ACTIVITY PLAN WITH THE COMMUNITY

An overall plan is now developed with the community to demonstrate the range of activities, the work that needs to be done, and the timeline. This exercise should also show the need for more formal structures to plan and implement work. A map is prepared to show this information (see Annex 4.2). From this orientation, the community begins to understand their resource management problems, why the dam is silting and in poor condition, and why rehabilitation of the entire catchment is necessary. Linkages between catchment protection and dam rehabilitation are made early on, and the community provides input into final dam design. From this integrated plan, more detailed work plans are prepared for different components.

[1] As implementation moves from design to site selection to planning, HLAs become more focused on the specific communities and participants involved in the programme. Exercises are similar in each case, but the information is used differently. Each HLA should learn from previous ones and not repeat work already done.

Step 3

ESTABLISH A LOCAL TECHNICAL ADVISORY COMMITTEE

The support and participation of local traditional leaders and other influential people in the community is critical. These leaders are asked to form a Technical Advisory Committee to the programme.

In each community, CARE facilitates direct linkages to the RDC system (i.e., elected councillors, WADCOs and VIDCOs) and the traditional system through establishment of the Technical Advisory Committee. The TAC brings representatives from these other institutions (e.g., councillors, traditional leaders, Village Community Workers, resident extension workers) and chairs of project committees and task forces, to work together on community issues (initially centred around dam rehabilitation).

The particular set-up will differ between communities, depending on local power dynamics. VIDCOs may have little local role and village representatives may only be interested in power and influence, with the more respected institution being the traditional structures. Institutional analyses (e.g., Section 3, Section 4) help identify the legitimate structures at the local level that can be linked to project committees. In some communities, the TAC may effectively replace VIDCOs if they are no longer functional. In other cases, the TAC may act as an arm of the VIDCO.

The TAC provides guidance to project management committees. Specific roles and responsibilities of the TAC include:

- Allocation of land
- Implementation of community-based constitution (see Section 5)
- Implementation of local regulations for project-related activities
- Community mobilisation
- Development of grazing management systems
- Solving land-related disputes in collaboration with government authorities

Creating these links improves access to government services, involves traditional leadership, and supports the sustainability of committee structures and thus the community-management approach. Involving traditional leaders is particularly crucial because of their important role in allocating land and controlling land use in Communal Areas. It is particularly important to have their support when regulating catchment area uses (see Section 7). The TAC allows community leaders to be formally recognised and play a vital role in the programme without being burdened by the day-to-day requirements of committee members.

Experiences emerging from a number of studies of community-based natural resource management initiatives shows that functional institutional arrangements need to fulfil a number of criteria (Murphree, 1991; Nangati, 1997), including:

- *Resource managers must own the resource and benefit directly from its use.*
- *There should be a close and proportional link between resource production and benefits.*
- *Benefits must be tangible and immediate.*
- *There should be local autonomy in decisions on how the products and benefits are distributed.*
- *The user group should be small enough to be cohesive and lower transaction costs but not so small that it becomes elusive and wholly self-serving.*
- *Leadership must be accountable, transparent, and broadly representative of the community.*
- *Responsibility at different scales should be nested to give effect to the principle of subsidiarity, with local issues being dealt with locally, not regionally, and regional issues being addressed at that level rather than being referred upwards for decisions.*
- *The boundaries of management units should be distinct and exclusive.*

DEVELOP MANAGEMENT STRUCTURES

Once committed to the programme, participants need to agree to a Social Contract, a tool that formalises the community's role, and decide what management structures will be used to fulfil their responsibilities.

SIGN THE SOCIAL CONTRACT

After the draft contract (in both English and Shona or other appropriate vernacular translations) has been circulated to community leaders and members, and they have had an opportunity to consider costs, benefits, roles and responsibilities, then it can be signed. A meeting is organised to discuss and ratify the Social Contact (in its original draft form or amended as required). The contract is read aloud, amended as required, and signed by representatives of all parties.

REVIEW DIFFERENT MANAGEMENT STRUCTURES

Communities usually choose to establish democratically elected committees to spearhead implementation of activities. The two most prominent committees are the Dam Rehabilitation Committee (DRC) and the Irrigation Committee (IC), which are developed as soon as possible. In some cases, the DRC also serves as an overall co-ordinating body for all activities. Other committees or task forces are formed to assume responsibilities for other activities, for example:

- Conservation Committee: Responsible for silt trap construction, gully reclamation, divergent banks, and other conservation measures.
- Fencing Task Force: Responsible for facilitating construction and maintenance of the fence surrounding the dam.
- Maintenance Task Force: Responsible for regular monitoring and fixing of physical structures, including dam wall, silt traps, irrigation systems, etc.

CARE has tried having existing community institutions assume leadership responsibilities rather than establish new structures, recognising the inherent sustainability of an existing group and the fear that a "project" group will cease once the intervention ends. Nonetheless, communities consistently ask to form project committees, citing the need for a project-specific institution to effectively manage implementation. Such newly created committees are more likely to function after CARE exits if they are closely aligned to existing institutions or respected leaders that will stimulate them to continue functioning; thus, the establishment of the TAC.

Often wealthy and powerful people are elected, more as recognition of status than of leadership skills. Participants should be clear on the roles and responsibilities of the different committees and/or task forces, so that the right people are elected (see Annex 4.3 and 4.4).

CONDUCT A TRAINING SESSION ON COMMUNITY-BASED MANAGEMENT

A training session is organised to train the community on the benefits of working together, and the idea of working within project management structures to provide direction. The content of the session follows the "Community Resources Training Manual" —Module 1, Lesson B "Community-based Management"— which covers the following topics:

- Working together
- Participation
- Trust and communication
- Existing groups and leaders
- Project management structures

Sometimes the DRC becomes less active once dam rehabilitation is finished, while the IC becomes more active as the garden grows. But if the IC is excluded from dam and catchment activities, and the DRC falls apart, then maintenance activities stop and the water supply for irrigated gardens is threatened. Rather than working in isolation, formal linkages between the DRC and IC should be created. Methods include:

- *Giving DRCs a more formal, co-ordinating role*
- *Holding joint DRC and IC meetings*
- *Joint membership in DRC and IC (i.e., some participants belong to both committees)*
- *Attendance of some DRC members at IC meetings and vice versa*
- *Involving traditional leaders as* ex officio *or direct members of all committees*
- *Involving the same household in different components of the project (e.g., male household member in DRC, female household member in IC)*

SELECT COMMITTEES AND COMMUNITY MOBILISER(S)

Community members are democratically elected to different positions in the project committees. CARE helps ensure that strong and effective leaders are chosen.

CONDUCT A TRAINING SESSION ON LEADERSHIP CONCEPTS

A training session is organised on leadership concepts, in support of committee elections. The content follows the "Community Resources Training Manual" —Module 1, Lesson C "Leadership Concepts"— which covers the following topics:

- Defining leadership
- Understanding different styles of leadership
- Recognising good leaders
- Leadership problems and solution
- Selecting leaders

At the end of the training session, the CARE Field Officer helps make arrangements for committee elections. Prior to re-elections, it is useful to hold refresher training on leadership concepts, to remind participants of the type of leaders they should elect.

ELECT COMMITTEES

Participants decide on the election process, and the Field Officer helps facilitate but does not become directly involved. The community usually elects committee members on their own, after the training session, and without the CARE Field Officer present. To ensure community ownership over these structures, CARE should not impose guidelines for gender composition, but look for other ways to include the full participation of women. However, women's involvement in all committees and task forces should be encouraged, especially in the management of irrigated vegetable gardens, since most participants are female.

Traditional gender roles often mean women are elected to the IC and not the DRC. Because of this, and because the DRC sometimes takes a stronger leadership and co-ordinating role, efforts need to be made to involve women in decision making from the earliest stages so their interests are addressed. It is also important to involve women in dam and catchment activities because this work directly affects sustainability of the irrigated water supply that they use. If ICs and garden members understand this connection, they will be more motivated to be involved in longer-term maintenance and enforcement.

SELECT COMMUNITY MOBILISERS

In addition to the elected committees, Community Mobilisers (CM) are also selected and trained. The CM is a volunteer extension worker whose responsibilities include community mobilisation and training, information dissemination, activity planning and co-ordination, resource mobilisation, and upkeep of community information systems (including material management). The CM also helps in conflict management.

The Community Mobiliser is selected by the DRC/IC, who are asked to choose someone who meets the following criteria:

- Should be a permanent resident of the area
- Able to read and write
- Project participant
- Trainable
- Has time for volunteer work
- Respectable and with no criminal record
- Preferably married and owns land in the area (i.e., reduces chances of moving to other places)
- Prepared to travel periodically

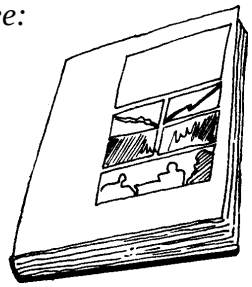
The CM ultimately serves as an assistant to the Field Officer and as a liaison person to the community-at-large and for government partners. They report to the DRC/IC.

The CM is recognised as a motivator and "do-er" within the community and is chosen more for his/her ability to get things done rather than political standing. An MOU is signed between the CM, CARE and the committees (see Annex 4.5). The CM is not promised any incentives from CARE, to avoid corrupting the selection process. Following selection of the CM, CARE provides a bicycle and protective clothing (e.g., overalls, gum boots) to facilitate their work. The CM is expected to work 3 days per week.

The role of the CM is significant and it must be encouraged early on that the community compensates them for their work. It is very important that CARE not assume responsibility for payment as it quickly undermines the nature of the position and the issue of sustainability.

For further information related to community mobilisation, please see:

- *CARE Zimbabwe. Community Resources Training Manual*
- *FAO. Group Promoter's Manual*
- *Ministry of Community Development & Women's Affairs. Let's Build Zimbabwe Together*
- *UNDP. Tools for Community Participation*



Section 4 Annex

Annex 4.1 Example – Social contract

Social contract between CARE Zimbabwe and Mapunya Community

Mapunya community and Care Zimbabwe have agreed on this social contract on the 12April 02. The social contract is for a small dams project which has the following key components, Small dams rehabilitation, Catchment area conservation, Irrigation systems installation, horticulture production and Marketing. Project specific task forces will carry out income generating activities. CARE Zimbabwe will play a facilitator role and provide resources not available in the community. The project belongs to the Mapunya community and as such communities should contribute locally available resources and should come up with comprehensive long-term plans for their project. CARE Zimbabwe will work on the project site for a period of three years:

Role of the community:

Dam Rehabilitation

- Provision of labor
- Locally available resources such as stones, grass,
- Material for live fencing
- Fence the Dam
- Financial contribution towards a dam maintenance plan
- Development of a community constitution
- Maintain the dam wall (Tree clearing and fence repair)

Catchment area

- Develop Catchment area protection plan
- Re-locate or organize the farmer's field for conservation purposes
- Implement the plan (Construction of sand traps, contours, Divergent banks, fencing the catchment area, planting of woodlots)
- Provision of locally available resources
- Provision of labor
- Gully reclamation activities
- Grazing scheme designing
- Drafting of a catchment area constitution
- Implement farmer crop trials

Irrigation

- Provide land for Irrigation
- Land clearing
- Land preparation and allocation
- Financial contribution towards the procurement of irrigation pipes(50%)
- Bricks/Stones for toilet and Water troughs construction
- Constitution for the garden participants
- Come up with a maintenance fund and plan
- Provide live fencing material

Social

The community should agree that it is their project and as such they will not receive any form of payment by Care when they provide labor. CARE Zimbabwe staff will not demand or get any produce for free from the community project. The community shall solve any disputes in the community using a community constitution and that the project site shall not be used for political rallies or meetings. The project participants will be accountable to the materials and tools given to them by CARE Zimbabwe.

CARE Zimbabwe will in turn provide the following:

- Community Mobilization and Training
- Transport
- Training Material where applicable
- Resources which are not available locally
- Capacity building of local institutions to effectively getting support from stake holders
- Provide Technical skills from other institutions not available in the area
- Provide additional funds for the installation of the Irrigation systems
- Facilitate exchange visits
- Technical input during participatory catchment planning and provide extension services
- Provide Tools and implements which not available locally (Wheel Barrows, Picks, Claw Hammers, etc) and these will be community owned

Agreement made and entered into at Mapunya 12 April 02 1999 between CARE Zimbabwe and Mapunya dam community and the two parties have agreed.

Chairperson DRC

Advisory Board Chair

Secretary

Conservation Committee Chair

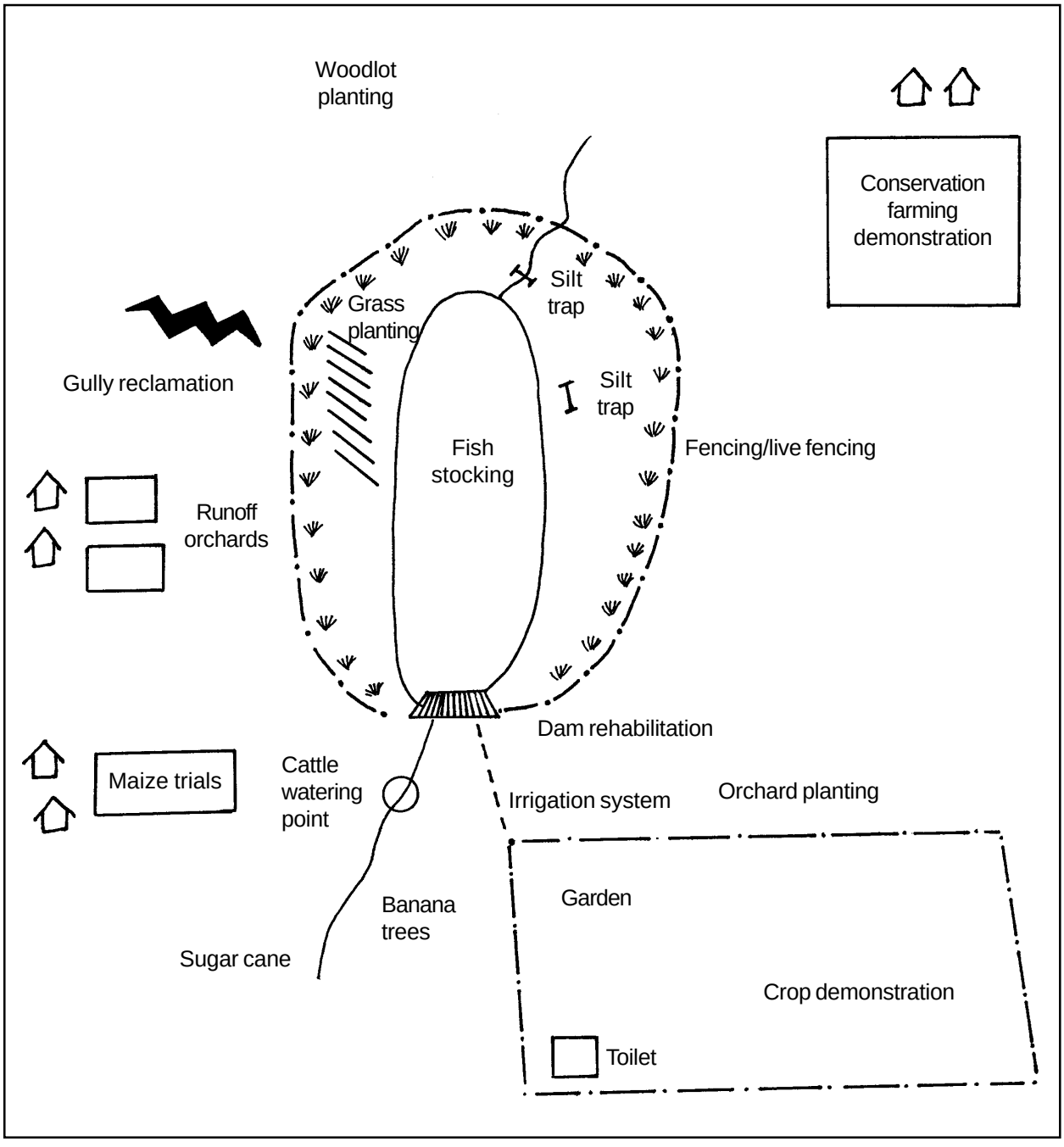
Irrigation secretary Chair

CARE Zimbabwe Field Officer

Agritex Officer

Annex 4.2 Example – Community plan

Activity	Timing	Responsibility
Dam rehabilitation	Sept-Dec	Dam Committee
Dam rehabilitation	Sept-Dec	Dam Committee
Irrigation system	Mar-May	Irrigation Committee
Garden establishment	Mar-May	Irrigation Committee
Gully reclamation	Oct-Nov	Conservation Committee
Woodlot + orchard planting	Oct-Nov	Conservation Committee
Conservation farming	Sept-Dec	Agronomy Task Force
Crop trails + demonstrations	Sept-Dec	Agronomy Task Force



Annex 4.3 Roles and responsibilities of different committees

Dam Rehabilitation Committee

Developing participatory plans
Implementing dam rehabilitation activities (dam clearing, resource mobilisation, stone pitching, grass planting, fencing, micro-catchment management)
Materials management at community level
Record keeping of all project participants and activities
Collection and accounting for financial community contribution
Facilitating the development and implementation of a community constitution
Conflict management
Co-ordinating and consolidating activities of other committees
Linkages with government and other partners
Assuming responsibility of small dams ownership and obtaining jurisdiction over water
Dam maintenance
Facilitate collection of any baseline information and any project-related studies

Irrigation Committee

Developing participatory plans
Implementing garden activities (site clearing, fencing, garden plot allocation, production and marketing, agro-processing)
Facilitating the construction of safe watering points and general health education
Upkeep of participant records
Collecting community contribution towards the construction of the irrigation schemes
Facilitating the collection and recording of locally available resources such as user fees
Co-ordinating production training, including farmer field days
Facilitating the development and implementation of a community constitution
Conflict management
Linkages with government and other partners, and DRC
Garden maintenance
Facilitate collection of any baseline information and any project-related studies

Conservation/Agronomy Committee

Developing participatory catchment plans
Facilitating the design and implementation of farmer research trials, catchment conservation and agro-forestry activities
Implementing demonstrations (pegging contours, runoff orchards, in-field soil and water conservation)
Establishing multi-purpose woodlots and community nurseries
Mobilising local resources (including financial and material)
Collecting data of on-farm research trials and demonstrations
Co-ordinating training, including farmer-to-farmer training, farmer field days and exchange visits
Facilitating the development and implementation of a community constitution
Linkages with DRC, research and other partners, including between extension and farmers

Annex 4.4 Roles and responsibilities of different committee positions

Functions of All Committee Members

Request for meetings
Monitor group progress and achievement of objectives
Support, question and check on activities
Ensure the constitution is obeyed
Encourage participation by all members in discussion, decision making and work
Introduce new ideas and encourage others to do the same
Report on the work of individuals and the group as a whole
Represent the group on special occasions

Functions of the Chairperson

Vice-Chairperson assumes these roles when the Chairperson is absent
Calls in meetings with the help of the secretary
Announces topics of day
Leads and guides the group
Leads discussions and maintains control
Sees that there is discipline and order according to the constitution
Distributes tasks according to the group's goals
Sees that problems are discussed within the group
Advises the members
Makes sure savings and loan procedures are followed
Finds solutions in case of conflict
Represents group to outside
Ensures achievement of desired results for the benefit of the entire members
Shares information from outside with group
Ensures group strategy and procedures
Is one of the bank account signatories

Functions of the Secretary

Vice-Secretary assumes these roles when the Secretary is absent
Calls meetings at the advice of chairperson
Takes minutes and keeps financial records
Compares records with Treasurer
Writes and dispatches letters
Reports to the group and outsiders at the advice of chairperson
Records important events
Is one of the signatories to the bank account

Functions of the Treasurer

Vice-Treasurer assumes these roles when the Treasurer is absent
Collects saving contributions, fines and repayments
Keeps money safe (at bank or at home)
Ensure finance records are open to members and are checked by appointed bodies
Advises group using the resources of its future needs
Makes sure the money is kept in a safe place at all times
Keeps finance records, expenses and bank statements
Is one of the signatories to the bank account

MEMORANDUM OF UNDERSTANDING

COMMUNITY MOBILISER

The purpose of this MOU is to establish in broad terms the framework and principles of employment and relationship between the community mobiliser, _____ community and CARE Zimbabwe.

This MOU has been agreed upon between representatives of the community, CARE Zimbabwe and the community mobiliser.

Role of Community

_____ community is responsible for the selection and appointment of the community mobiliser. If it is required the community will also be responsible for the termination of his/her contract.

In addition, identified community members/institutions will be responsible for monitoring the work and effectiveness of the community mobiliser. The overall responsibilities of the community mobiliser are outlined in the community mobilser's terms of reference. Specific activities will be outlined on a quarterly basis in collaboration with the community mobiliser and a representative from CARE Zimbabwe.

Role of CARE Zimbabwe

CARE will be responsible for the following:

- supervising the community mobiliser
- providing logistical support for the community mobiliser (as required)
- documenting quarterly work plans for the community mobiliser and analysing effectiveness at the end of each quarter
- acting as mediator between the community and community mobiliser should problems/disputes arise
- providing training of the community mobiliser (as needed) to execute his/her duties
- liasing on a regular basis with the community mobiliser

Role of Community Mobiliser

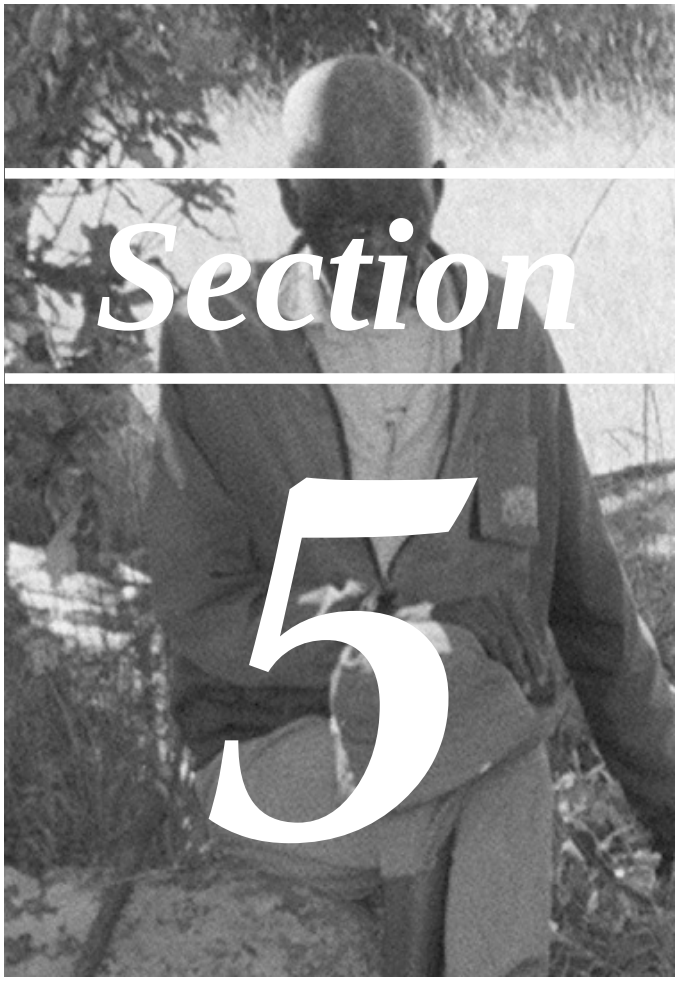
The Community Mobiliser will report to the CARE Field Officer or Senior Field Officer and will execute the following functions:

1. Motivate project participants to undertake dam and irrigation rehabilitation activities identified by the project.
2. Assist the FO/SFO with project planning process using process-oriented participatory methodologies.
3. Maintain and submit as required progress reports of rehabilitation work.
4. Assist Committees to mobilise locally available resources and ensure effective and proper utilisation of resources.
5. Assist Field Officers in training of DRC and IC and ensure that information is disseminated to community-at-large.
6. Hold regular meetings with non-committee community members and present concerns to committees and Field Officer.
7. Undertake other related duties as directed by Field Officer.
8. Direct interface with RDC and Government sectoral departments at grassroots level.

In order to effectively undertake his/her duties the community mobiliser shall receive protective clothing, a pair of shoe, a portfolio and a bicycle. (If the community mobiliser resigns or is asked to resign by the community, the above mentioned articles shall be returned to CARE).

.....	.....
Signature - Community Mobiliser	Signature - CARE Representative
.....	.....
Signature - DRC Chairperson	Signature - IC Chairperson

Date: .....



Section 5

DEVELOPING COMMUNITY MANAGEMENT SYSTEMS

OBJECTIVE

To support community-based implementation and encourage self-sufficiency through the development of clear management systems.

STEPS

1. Detail Management Systems with Committees and Community Mobiliser(s)
2. Develop Skills for Implementing Management Systems
3. Develop Community Management Systems and Tools

SUMMARY OF THE PROCESS

CARE's community-management approach puts responsibility in the hands of the community, with support from CARE and partners as needed. Once committees and Community Mobilisers (CMs) are in place, systems need to be developed to help them fulfil this role.

Committees and CMs must have full control over the project, financial and materials management systems for which they are responsible. Capacity building activities are done to ensure they have the necessary skills. Throughout implementation, CARE and partners transfer information, decision-making skills, and community organisation methods to all committees and CMs. The training process follows Module 2 of the "Community Resources Training Manual", and the separate "Community Mobiliser Training Module". Details on training sessions referred to in this section are found in these companion documents. Along with training, CARE involves the committees in decision-making processes right from the start, to develop skills in a practical way. Committees and CMs plan work activities, mobilise resources, develop project rules, collect fees, and manage materials. As these procedures develop and records are kept, CARE monitors community systems to ensure they are compatible with CARE and/or the donor's internal systems.

By increasing participants' ability to run their own affairs, SDCRMP develops strong community-based organisations. This kind of participatory planning and management harnesses community commitment to programme activities, and puts in place systems that can continue after CARE exits.

DETAILED OVERVIEW

Step 1 Detail management systems with committees and Community Mobilisers

Review project management systems
Review financial management systems
Review materials management systems

Step 2 Develop skills for implementing management systems

Assess capacities of committee members and Community Mobilisers
Schedule project management training
Conduct training sessions on project management
Conduct a training session for Community Mobilisers

Step 3 Develop community management systems and tools

Develop the Constitution
Establish project record systems
Develop community work plans

DETAIL MANAGEMENT SYSTEMS WITH COMMITTEES AND COMMUNITY MOBILISERS

Newly elected, committees may understand their overall function, but are not yet familiar with the actual systems and tools they will use. Field Officers review the project, financial and material management systems in more detail with committees.

REVIEW PROJECT MANAGEMENT SYSTEMS

As project managers, committees and Community Mobiliser(s) are responsible for:

Planning work activities: Each committee develops work plans for their activities on a regular basis. New activities and priorities are added to these work plans as time goes by. Committees are responsible for reporting back to their members on work plan progress. These plans should support the overall community plan already developed (see Section 4).

Holding meetings: Committees organise regular meetings for both committee members and the whole community. Committee meetings are held monthly, and larger meetings are held less frequently. Agendas are prepared for every meeting, and participants are informed of the purpose, time and location of the meeting well in advance. Minutes are taken for all meetings.

Mobilising resources: Committees plan the gathering and ferrying of all locally available resources. Work parties and schedules need to be organised with participants.

Conflict resolution: As elected leaders, committees play an important role in avoiding conflicts, and resolving conflicts amongst themselves and amongst participants, in a fair manner. The Constitution is an important tool for conflict management (see Step 3).

Monitoring: Committees monitor progress and ensure quality work is done. Participation is also monitored so committees can determine when participation (and motivation) is low.

REVIEW FINANCIAL MANAGEMENT SYSTEMS

Committees are responsible for managing funds from a number of sources, including:

Joining fees: Most communities set a joining fee to be a participant in the project. This is either a one-time fee, or a monthly or annual fee, used to raise money for maintenance and repair. This fee is collected by the DRC from any dam user, regular or seasonal[1].

Fees may sometimes inadvertently exclude poor and vulnerable households, causing people to leave the project. CARE encourages committees to develop alternatives, such as delaying payment, subsidising fees, in-kind contributions, and garden sales to raise money for maintenance.

[1] Even if committees set a fee that includes seasonal dam users, non-participants can refuse to pay. Zimbabwe's Water Act maintains open access to water sources for all citizens.

Irrigation contributions: Communities contribute part of the cost of the irrigation system (see Section 8), and use different systems for collecting the money. The cost per plot is determined, and the contribution amount for each household is calculated based on the number of plots they have.

User fees: Depending on the type of joining fee set, some committees also collect user fees to raise funds for maintenance and operation, or special activities (e.g., money to buy garden inputs). Committees may instead decide to collect money only for specific purposes, whenever it is needed. Over time, it is important that the community assumes any costs of managing their resource. For example, if extension workers do not visit unless transport is provided, the community should eventually be responsible for this cost. User fees help pay for such costs.

CARE budget: Depending on the programme approach, a community may be given a budget with which they must pay for all activities at their site. This is a more participatory approach to implementation, where the community decides how it will spend the money (with guidance by CARE and partners). Like irrigation contributions, it also ensures that expensive options (e.g., extensive dam wall raising) are carefully considered.

Management of these funds requires a bank account and accurate record keeping when money is collected. The person giving the money and the person receiving the money should sign the record for each transaction. Often only a few people usually maintain accounts, and most participants are unaware of the financial status. Abuse of funds needs to be avoided with transparent financial systems that are accountable to all participants.

Women should be involved in handling group finances to improve their access and control over financial resources, reduce conflict between women and men participants, and because they often have the most to lose when a scheme has financial problems.

REVIEW MATERIALS MANAGEMENT SYSTEMS

Throughout implementation, materials are delivered by CARE and stored by the community, often by the DRC chairperson. Accountability is critical, and a good stock control system has to be in place. The following elements provide checks and balances:

- Materials movement from the supplier to the community must be traceable. CARE keeps a Material Stores Record Card for each type of material, and the community keeps a Field Material Record Card for each type of material (see Annex 5.1).
- The DRC Chairperson and Secretary should be the only people responsible for entries on the Field Material Record Card.
- Materials received should be entered immediately onto the Field Material Record Card, and the delivery person should sign this record. The condition, quality and type of stock received, and the date, should be written down. The DRC Chairperson shall sign to approve the stock received.

CARE experienced various problems with materials management in communities. At many sites, there was no record of receipt or use of materials. Different people were often responsible for record keeping, and records were inconsistent. Audits showed that some people were using resources for their own benefit. Field Officers and committees need to be trained in the importance of materials management. Field Officer responsibility needs to be made clear, and they must be held accountable for problems. Close and regular monitoring is critical.

- Materials used or removed from the storage should be entered into the Field Material Record Card immediately.
- No cancellations or rubbing of figures is allowed
- All damages, breakage or losses should be recorded and the committee should be informed. The DRC should report to the Field Officer, who should report to the Programme Manager. After assessing the damages, CARE may act accordingly.

The materials management system is designed to fit into CARE's internal structure, and allow for accountability at all levels and for comprehensive auditing. If there are any discrepancies, senior management decides on appropriate penalties.

DEVELOP SKILLS FOR IMPLEMENTING MANAGEMENT SYSTEMS

Project management training is an on-going process, but is especially critical early on. The objective of training is to develop planning, management and monitoring skills, especially in committee members, necessary for successful and sustainable implementation.

ASSESS CAPACITIES OF COMMITTEE MEMBERS AND COMMUNITY MOBILISER(S)

With a better understanding of their responsibilities, committee members know the skills they have or are lacking for performing these tasks. A training needs assessment helps specify training content, extension methods, timing of lessons, amount of training, and follow-up that is most appropriate for the audience. The Field Officer does a participatory needs analysis using different methods to gather the information, including group discussions and exercises, interviews, questionnaires, observation and documents. The characteristics of community members (e.g., education, wealth, attitudes, motivations, etc.) also provide clues as to the training needs and the best content and process to follow in the training programme.

Based on the capacities of committee members, as well as their immediate functions, the training programme is tailored as needed.

SCHEDULE PROJECT MANAGEMENT TRAINING

The Field Officer works with the committee chairperson(s) and the Community Mobiliser(s) to schedule times for the training sessions. The Field Officer informs other partners involved in the training of the time and place well ahead of schedule. If necessary, priority is given to those topics that are most important for the committee to perform its immediate functions, such as record keeping and work plans.

CONDUCT TRAINING SESSIONS ON PROJECT MANAGEMENT

The purpose of this training is to develop facilitation, planning, management, and monitoring skills in committee members that are necessary for successful implementation. The content follows the "Community Resources Training Manual" —Module 2 "Project Management" —which covers the following lessons and topics:

- Lesson A: Group Facilitation
  - Building a team
  - Strengthening the group
  - Gender awareness
  - Facilitating meetings
  - Developing rules

- Lesson B: Conflict Management
  - Causes and types of conflict
  - Methods to resolve conflicts
  - Good qualities for conflict resolution

- Lesson C: Planning and Implementation
  - Project cycle
  - Developing community plans
  - Monitoring and evaluating progress
  - Organisation skills

- Lesson D: Record Keeping
  - Reasons for record keeping
  - Types of project records
  - Monitoring and using records
  - Preparing budgets

It is not necessary or possible for all of these topics to be covered quickly. Different methods can be used to train committees depending on their needs. Some Field Officers hold a 2-day session that briefly covers all topics (or key topics), and then return to certain topics as necessary. For example, returning to conflict management when such skills become needed. Others choose to hold a 1-day session on work plans and record keeping early on, so that project management systems can be developed, returning to group facilitation, monitoring and evaluation, and other topics over time.

The development and use of different management systems and tools, including the Constitution, work plans, and records, are discussed during this training session. Training in these topics is on-going —as different skills are needed, topics need to be refreshed, and elections put new committee members in place. Exchange visits can be organised with other communities as part of this training.

CONDUCT A TRAINING SESSION FOR COMMUNITY MOBILISERS

A training session is organised to train Community Mobilisers on principles of project management. Training is done by the CARE Field Officer and training specialist(s). The content follows the "Community Resources Training Manual – Community Mobiliser Training", which covers the following lessons (topics are similar to those for committees):

- Institutional Set-up
- Motivation and Leadership
- Group Facilitation
- Conflict Management
- Planning and Implementation
- Record Keeping
- Participatory Techniques

An efficient way to do this training programme is to train all Community Mobilisers in one district together, over a 5-day period. This training should be done as soon as CMs are selected.

Not only is project management training an on-going process. Other technical training sessions are held throughout implementation for committee members, task forces and the community. Similar steps for assessing capacities and developing skills in catchment protection, dryland agriculture, and garden production are discussed in later sections.

DEVELOP COMMUNITY MANAGEMENT SYSTEMS AND TOOLS

Community management systems are developed with committees to support implementation. Throughout implementation, CARE and partners work with the community to improve these systems.

DEVELOP THE CONSTITUTION

Although development of the Constitution is ultimately the responsibility of all participants, the committees often draft the constitution for approval by the community and other partners. The Constitution is a formal, written agreement amongst participants that is used to guide implementation of community activities, operations of the committees and participation by members. It formalises existence of the group, and ensures its continuity even after committee members and participants change. The Constitution defines group structural and procedural arrangements, including rules and penalties. Rules include:

- Operational rules that define what shall or shall not be done, by whom, when, etc. Rules of participation are included, especially policies for late-joiners or drop-outs.
- Decision-making rules that specify how these operational rules are made, changed, removed, enforced, etc.
- Constitutional rules that define the management structures, their roles, and how they are elected, changed, removed, etc.

The Constitution also includes rules on land and resource use in the catchment, usually developed during the Participatory Catchment Plan process (see Section 7). Rules on resource use are developed by participants and included in the Constitution, but in order to be enforceable across the community, these rules need to be agreed to by traditional leaders (through the TAC) because of their responsibility for land allocation and land use control in Communal Areas. Ultimately, these rules should be ratified by the RDC as legal by-laws. Usually, district by-laws are formed by the RDC in a non-participatory way, and do not consider site-specific issues even though by-law enforcement is a community responsibility. Revenues (e.g., fines) are collected by the RDC. The community needs to be recognised as the responsible party for their dam and catchment resources through more formal means such as ratifying community-developed resource by-laws.

Participants have noted the key weakness of the Constitution is that it only binds members. Non-participants may refuse to observe the rules of the Constitution, for example, by cutting trees in areas where this has been disallowed. Given difficulties in developing district by-laws, the traditional leadership system plays the most important role in the enforcement of these land and resource use rules.

The Field Officer and Ministry of National Affairs partners work with the community in drawing up the Constitution (see example in Annex 5.2). Appropriate extension agencies provide input when catchment resource rules are developed.

The Institute of Environmental Studies (IES) (with CARE as a partner) has worked with local communities and RDCs to develop community-based by-laws governing local resource use. In one district, the parties agreed to a process that would see communities drafting their by-laws, with adoption by the RDC as long as they supported district and higher government policies. If successful, communities will be responsible for enforcement and collecting fines, with RDCs responsible for arbitration and monitoring. Communities would then be responsible for organising and paying for maintenance and improvements.

ESTABLISH PROJECT RECORD SYSTEMS

Various records are used to support the project, financial and materials management responsibilities of the committees. Types of records include (see Annex 5.3):

- Materials records
- Financial records
- Minutes
- Visitor logbook
- Participation/attendance register
- Rainfall records
- Siltation records
- Water use records
- Garden production records

Records are not intended to be an end themselves, but support monitoring and evaluation of activities —for CARE, but ultimately for the benefit of the community. If record keeping is not sustainable by participants, it is not useful. Field Officers try to balance project record keeping needs with the needs and interests of the community.

IES did a study of record keeping systems in rural communities, including CARE small dam sites. The main reason for keeping records was (not surprisingly) to satisfy external project sponsors. Some people complained they did not see the value of these records. However, some record keeping is already done in the community, including farmer records of production and income, and local leader community registers and records of offenses and fines. Constraints to record keeping included illiteracy, forgetfulness, lack of stationary, security of records, lack of interest, and lack of incentives.

DEVELOP COMMUNITY WORK PLANS

As part of project management training (see Step 2), committees begin developing work plans. Work plans include goals, activities, methods, resources required, schedule and deadline, responsible parties, indicators of completion or success and procedures for monitoring progress.

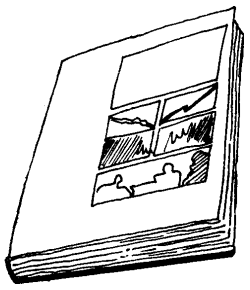
Long-term community action plans provide goals and a direction to future activities (not just dam and catchment rehabilitation), and support more sustainable community management structures. These action plans and their timeframe should eventually be developed by the community to encourage ownership.

Dam Committee – work plan					
Goal	**Activity/Method**	**Resources**	**Time**	**Responsibility**	**Indicator**
Increase capacity of the dam	Gather sand, rocks and water for construction and stone pitching	100 people Wheelbarrow, cart, shovels	Sept	DRC nominates team leaders to supervise	Resources in place for construction
	Rotating work teams of 10 people during construction	10 people/day Team rotates each day (50 total)	mid-Oct to mid-Nov	DRC recruits, and committee supervises	Construction is completed on time
Protect dam wall	Stone pitch and grass dam wall	40 people Wheelbarrow, shovels, grass seed/seedlings	Dec	DRC recruits and supervises	Completed before rains No erosion of dam wall
	Install fence posts, wire fence and droppers around wall	25 people Posts, wire, droppers, cement	May	Maintenance task force	People and livestock restricted
Maintain dam	Select Maintenance Task Force	10 people	May	DRC	Active in Year 1

Field Officers facilitate the preparation of work plans, ensuring they support CARE's activity plans (e.g., timing of procurement, seasonal restrictions, etc.). Committees are responsible for developing and reviewing work plans, but all participants provide input and receive feedback regularly. Early on in implementation, work plans are simple, focused on gathering local resources, organising labour for rehabilitation and completing assessments. However, as time goes on, work plans are revised and become more complex. Different committees develop their own work plans —planning processes for catchment rehabilitation, irrigation development, and dryland improvements are discussed in Sections 7, 8 and 9, respectively.

For further information related to community management systems, please see:

- *CARE Zimbabwe. Community Resources Training Manual*
- *Kozanayi and Campbell. Monitoring and Record Keeping Systems in Romwe*
- *Campbell et al. Forging New Institutional Arrangements for Common Property Resource Management – A Case Study from Southern Zimbabwe*



Section 5 Annex

Annex 5.1 Example – Materials management record cards

CARE INTERNATIONAL - ZIMBABWE

FIELD MATERIAL RECORD CARD

NAME OF DAM: _____

DISTRICT: _____

Name of Mobiliser\Chairperson\Community: _____

ITEM DESCRIPTION : _____

RECEIPTS				ISSUES					
DATE	DEL. NOTE	RECEIVED FROM	QTY	DATE	ISSUED TO	QTY	BALANCE	SIGNATURE OF RECEIVER	
								Full name:	Signature:

Checked by:..... Date:.....

CARE Official's Signature

CARE INTERNATIONAL - ZIMBABWE

MATERIAL STORES RECORD CARD MASTER COPY

ITEM DESCRIPTION : _____

RECEIPTS								ISSUES						
DATE	GRN NOTE	PURCHASE ORDER NO.	RECEIVED FROM	QTY	UNIT PRICE	TOTAL COST	REMARKS	DATE	DEL NOTE	QTY	TOTAL COST	ISSUED TO	BALANCE	REMARKS

Annex 5.2 Example – Constitution

-1-

1. Name
Mbilashava Dam Rehabilitation and Irrigation

2. Location
18km north of Zvishavane off the Gweru Road, between Mbilashava and Ngomeyebani VIDCOs

3. Objectives
- To establish a community system to lead the work
- To erect silt traps
- To standardise all fields in the catchment area
- To abate stream bank cultivation
- To prevent silt from all sources in the catchment area from coming to the dam
- To protect the dam reservoir and wall and improve the gardens
- To seek technical advice from all government departments and NGOs

4. Area of Influence
Mbilashava and Ngomeyebani VIDCOs

5. Membership
- Free of charge and voluntary to all residents of Mbilashava and Ngomeyebani VIDCOs and any other interested parties from neighbouring Vukuso ward.
- All with a garden at the dam, owning cattle, goats, donkeys or sheep, with a field in the catchment area or who use the dam water in any way shall be expected to participate.

6. Rights of Community
Decision making at meetings.

7. Obligation of Members
Abide by constitution and direction given by chosen committee and extension staff.

8. Termination of Membership
When one has left the area of influence or upon project completion.

9. Voting
Each member is allowed to vote.

10. Quorum
When there is sufficient representation (half the participants) from each village.

11. General Meeting
Shall be held once every month.

12. Management Committees (dam, catchment area, irrigation)
The dam committee shall serve as the mother body with absolute control over the whole project and shall have a catchment area committee in terms of work in the catchment area and an irrigation committee in terms of gardens administration.

13. Term of Office of Management Committee
One year, after which new elections are held at an annual general meeting. If one is found to be defective on 3 occasions, they will be asked to step down.

-2-

14. Powers of the Management Committee
To cause all members of the project to abide by the set by-laws, to set up sub-committees to carry out certain activities, to inspect the catchment area, dam and gardens, to collect subscriptions (user fees) from garden participants.

15. Duties of the Management Committee
To administer the day-to-day work at the dam sites
To monitor water use and activities at the dam site and gardens
To maintain proper account of all monies, tools and materials at project site and project registers and a log book

16. Duties
Chairperson: Head all activities, keep tools and materials
Secretary: Maintain an up-to-date record of all records, documents and registers of the dam. Keep inventory of the dam property. Sign and conduct the correspondence of the dam. Summon members to attend meetings. Keep and take minutes at all meetings.
Treasurer: Handling all monies coming to the dam or irrigation committee. Keep all accounts and books of the project.

17. Banking
All monies shall be banked and books shall be kept (books of accounts). The chairperson, secretary and treasurer shall be signatories. Any two will sign.

18. Registers and Records
These shall be kept by secretaries of the dam, irrigation and catchment area committees and should be used whenever at work.

19. Settlement of Disputes
Shall be done through the dam committee with the Councillor sitting in failure to which the matter will be referred to the District Administrator.

Dam Committee:

Chairperson:	I. Machacha	.....
Vice:	T. Ziyambi	.....
Secretary:	J. Musvire	.....
Vice:	S. Mangaliso	.....
Treasurer:	M. Kwashira	.....
Committee members:	L. Mashonganyika	.....
	E. Chikwekwete	.....

Annex 5.3 Example – Project records

Rainfall records:

Amount of rain (mm)	Month											
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1999												
2000												

Livestock records:

Type of Livestock	Initial Stock	Increase Through			Sub-Total	Loss Through			
		Buying	Gifts	Births		Slaughter	Sales or give aways	Death	Total

Note: This information can be given a financial value so that the farmer knows the monetary value of the livestock.

Production records:

Name of Crop	Area Planted	Date Planted	Qty of Seed	Variety	Fertiliser Used	Chemicals Used	Date of Germ	Yield

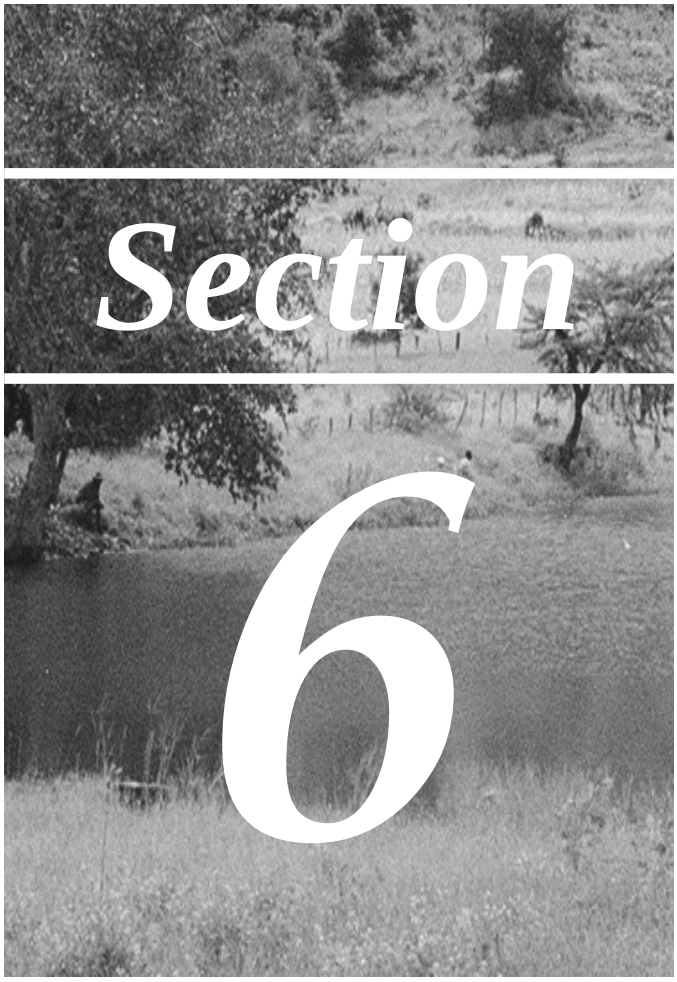
Note: Quantity of seed and yield can have a cost and return column respectively so as to get the monetary value of the activity

Garden income and expense records (by month)

Date	Item	Number	Cost per unit	Total expense	Total income	Balance
1 June	Opening balance					**0**
2 June	Rape seed	2 packets	70	140		**- 140**
2 June	Tomato seed	1 packet	155	155		**- 295**
2 June	Compound D (maize)	1x50 kg	950	950		**- 1245**
2 June	Chemicals (tomatoes)	2 packets	350	700		**- 1945**
2 June	Bus fare to Masvingo	2	150	300		**- 2245**
10 June	Tomato sales	20 kg	200		4000	**1755**
11 June	Sugar cane sales	5 sticks	10		50	**1805**
28 June	Rape sales	20 bundles	20		400	**2205**
30 June	Maize seed	1 x 10 kg	950	950		**1255**
Totals				- 3195	4450	
30 June	Closing balance (to be carried over to the next month record)				1255	

Summary data for June

Crop	Total purchases	Total sales	Balance
Tomato	1155	4000	2845
Sugar cane	-	50	50
Rape	140	400	260



Section 6

SECTION 6

REHABILITATION AND PROTECTION OF SMALL DAMS

OBJECTIVE

To improve the condition and provide better long-term protection of the small dam, and increase dam capacity where possible.

STEPS

1. Plan Small Dam Rehabilitation Activities
2. Prepare for Physical Works
3. Hire Contractors
4. Rehabilitate Dam Infrastructure
5. Protect Dam Wall
6. Adopt Systems for Long-term Dam Protection

SUMMARY OF THE PROCESS

Dams are rehabilitated if they are breached or have damaged walls, are partially silted, and/or can be increased in capacity. Activities include preparatory work (technical designs, gathering resources, clearing dam wall), physical construction (usually the responsibility of contractors and engineers), and on-going maintenance.

Dam rehabilitation and protection is the first technical activity done by the community. The community and Dam Rehabilitation Committee (DRC) is involved in all stages, to support a community-management approach. Large work parties gather and ferry resources to the site, and provide manual labour. This community contribution is the first task planned and co-ordinated by the committees (mostly the DRC and Community Mobilisers), and helps to mobilise the community into action. Because rehabilitation involves so many people, issues on working together as a community often surface and good mobilisation processes are essential. CARE supports mobilisation and task co-ordination, and manages technical contributions of engineers and government partners. Dam rehabilitation is a highly technical activity that requires the skills and supervision of certified engineers and contractors. Systems for on-going maintenance by the community are developed for sustainability.

For the community to understand the programme as an integrated set of interventions to improve the sustainability of their local resources, a Community Plan should be prepared before dam rehabilitation begins (see Section 4). This way, the community will start to understand land and water use, community management problems, why the dam is silting and in poor condition, and why rehabilitation and management of the entire catchment is necessary. From this overall plan, more detailed work plans are prepared for different activities. Both seasonal and regular dam users need to be involved in dam rehabilitation.

SECTION 6 DETAILED OVERVIEW

Step 1 Plan small dam rehabilitation activities
- Recognise water use management issues
- Develop final dam rehabilitation design
- Develop work plan for community responsibilities

Step 2 Prepare for physical works
- Procure non-available resources
- Collect and ferry locally available resources
- Clear the dam wall

Step 3 Hire contractors

Step 4 Rehabilitate dam infrastructure
- Raise wall and spillway
- Re-build breached dam walls
- Repair dam wall leaks
- Reduce seepage

Step 5 Protect dam wall
- Stone pitching on upstream side of dam wall
- Plant grass on crest and downstream side of dam wall

Step 6 Adopt systems for long-term dam protection
- Monitor and maintain dam infrastructure
- User fees and other alternatives

PLAN SMALL DAM REHABILITATION ACTIVITIES

Technical feasibility studies are completed during site selection, but surveys, detailed designs and technical drawings still need to be prepared by engineers. The Field Officer, extension workers, and DRC work to ensure community needs and concerns for their water use area are addressed in rehabilitation plans.

RECOGNISE WATER USE MANAGEMENT ISSUES

Social problems sometimes arise once dam rehabilitation begins, as people begin making assumptions about activities or being concerned that their needs are not being met. This is particularly the case for seasonal dam users, who may not have been involved in initial orientation activities. Some of the questions asked include who is allowed to use the dam, who is responsible for dam maintenance and repairs, and how water use is controlled and apportioned. Traditional leaders and committees address these issues by sharing information with all dam users, hearing their concerns, and involving all stakeholders in initial planning steps (i.e., in developing the Community Plan — Section 4, and the Participatory Catchment Plan —Section 7).

DEVELOP FINAL DAM REHABILITATION DESIGN

The technical feasibility studies prepared during site selection (see Section 3) are confirmed with more detailed information that feeds into the rehabilitation design. Certified engineers design and approve any dam wall and spillway renovations, in collaboration with Agritex, DDF, and RDCs as necessary. Engineers should also meet with DRCs and tailor the design to suit community priorities. This process merges community involvement with technical assessments, in support of a community-management approach to decision making. Rehabilitation work focuses on improving existing structures within available budgets. As often as possible, engineers try to increase the capacity of dams. Final designs indicate contractor needs, and the bill of quantities for material (see Annex 6.1).

Certified engineers from private consulting firms have been used with more success than government agencies. CARE has found that the experience of private firms in Zimbabwe is better than (often less experienced) engineers working in government.

DEVELOP WORK PLAN FOR COMMUNITY RESPONSIBILITIES

Participants are responsible for gathering resources and providing manual labour. The DRC develops a work plan to identify activities, people responsible, and timelines for completing these tasks. This plan needs to consider when materials are needed by, when contractors are working, when help from extension workers and/or Field Officers is needed, the number of people available to work and when, and other logistical issues. The Field Officer works with the DRC to develop the work plan (which will be revised over time). Work plans may have been started during project management training (see Section 5). If training has not yet begun, Module 2, Lesson C in the “Community Resources Training Manual” provides a curriculum on community work plans that can be used to train DRCs.

PREPARE FOR PHYSICAL WORKS

To prepare for construction activities, the community gathers local resources and CARE procures non-local resources. Stripping the dam wall of all vegetation and removing anthills is done in preparation for physical works and for maintenance.

PROCURE NON-AVAILABLE RESOURCES

Using the bill of quantities for dam rehabilitation materials provided by the engineer, the Field Officer requests material procurement as soon as possible, to avoid construction delays. Bulk requests (i.e., multiple dam sites at one time) are recommended by the Administration Department for better efficiency. Appropriate procedures for material procurement (see Section 2) are followed by administration staff, including receiving at least 3 quotes from different suppliers as part of the bid analysis process.

COLLECT AND FERRY LOCALLY AVAILABLE RESOURCES

The community, as stipulated in the Social Contract, collects all locally available resources. DRC work plans co-ordinate this effort (see Step 1). These resources must be collected as soon as possible, and usually include sand, construction soils (sodic soil not recommended), stones and rocks, and water. Types and amounts of materials should be provided in the final dam design and bill of quantities. The engineer may recommend suitable areas for collecting resources. The community is responsible for transporting resources to the dam site, again through co-ordination of community work groups (e.g., using wheelbarrows, scotch carts, etc.). CARE provides necessary tools for this work. If stones and large rocks must be transported from an area not immediately adjacent to the dam site, CARE sometimes provides transport to ferry stones to the construction site. However, the provision of transport must be carefully considered, as it does not support a community-management approach. As part of gathering resources, the community may be asked to crush stone for concrete aggregate.

As much as possible, soil for embankment construction should be gathered from the dam basin, but not closer than 20m from the embankment centre line; soil should not be excavated near the dam wall, as it will weaken foundations and increase seepage.

CLEAR THE DAM WALL

Shrubs, trees, grass, and anthills are cleared from the dam wall to avoid root and anthill development, which breaks up the earth wall and allows water to enter and weaken it. None of this material should be used as fill in rehabilitation works. Community work parties, organised by the DRC, are responsible. The removal of some larger trees and anthills may require assistance from contractors, extension workers, or CARE. CARE provides basic tools to help clear the dam wall. Maintenance activities check for vegetation and anthills on an on-going basis, so the DRC may identify and involve the Maintenance Task Force at this step (see Step 5).

Step 3

HIRE CONTRACTORS

Dam rehabilitation is a highly technical activity that requires the skills and supervision of certified engineers and contractors. The engineer is responsible for the rehabilitation design, and contractors carry out construction work.

At most sites, communities work under the advice of engineers, contractors and extension workers to rehabilitate the dam. CARE and engineers must hire contractors once the rehabilitation design is in place. Administration staff follow appropriate procedures for procurement and contracting (see Section 2), including receiving at least 3 quotes from different contractors as part of the bid analysis process. Contractors may need to have input on the final dam design.

The engineer and CARE are responsible for supervising the contractors. Community work parties help with manual labour such as digging and filling, but only under the direction of these experts. The community may also need to provide draft power.

Step 4

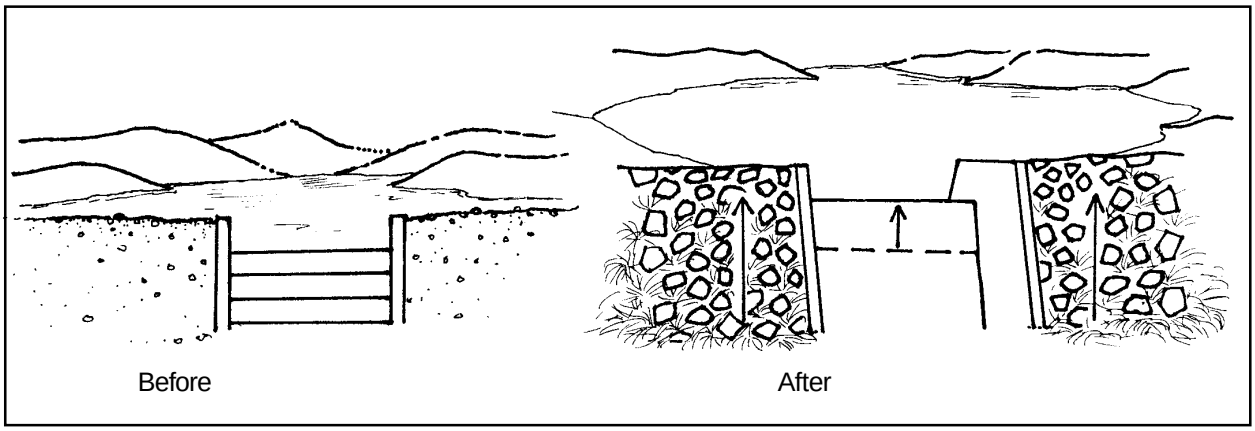
REHABILITATE DAM INFRASTRUCTURE

Construction work is done during the winter season (May to October), before the rains begin. Various resources are available for information on small dam construction and rehabilitation (see reference list). The community may feel that dam capacity can be increased and may want to see the dam wall and spillway raised. But if the original design does not allow for an increase in dam capacity (i.e., the wall is not strong enough or the existing dam was built to the optimum size in relation to the catchment area), then this type of construction can not be done.

RAISE WALL AND SPILLWAY (AS NECESSARY)

Small dam rehabilitation work often involves raising or extending embankments and spillways to increase the dam capacity. The impact of a larger capacity dam needs to be considered in terms of the existing dam wall structure (is it strong enough?) and the throwback of the dam reservoir (will anything be damaged or flooded?). Dams to be raised are first surveyed by engineers to confirm the above. The dam wall width toe to toe, and the crest, are usually increased. For small dams, minimum wall slopes of 2:1 (horizontal:vertical) downstream and upstream are kept, or created, to ensure stability. However, the slopes are generally designed on the basis of the properties of the material to be used and height of embankment. In some cases, the dam design may allow for spillway raising only provided there is excess existing freeboard for the design flood being considered. It is noted that the required freeboard varies from dam to dam due to variations in catchment areas

and design floods. A common mistake in the past was to arbitrarily fix the freeboard, which in most cases resulted in overtopping of the dams when the spillways failed to cope with the floods. Raising only the dam wall will not result in increased capacity.

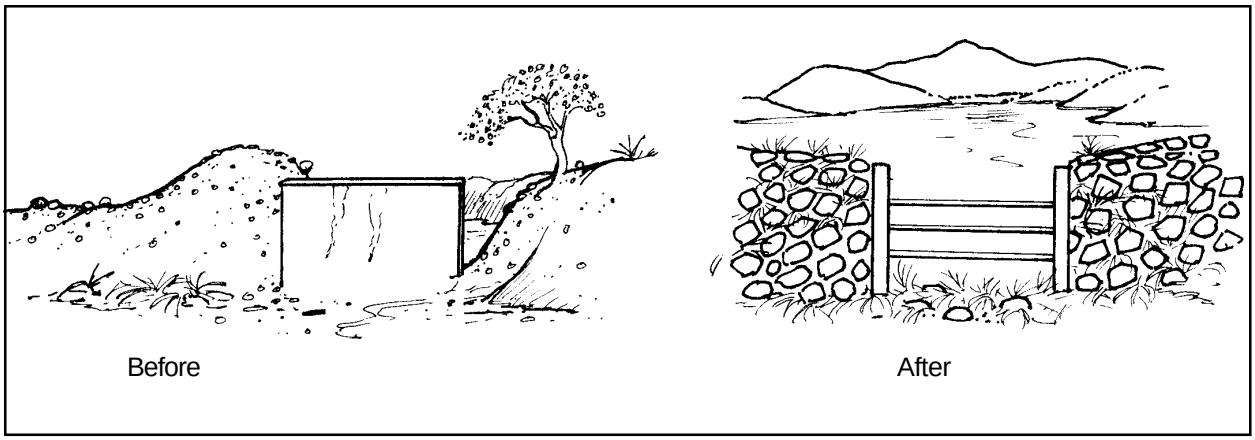


It is critical that a certified and experienced engineer is responsible for dam wall and spillway raising, as some small dams were not properly built, and increasing their height can often cause an intact dam to breach because the pressure of water against the dam wall increases. The original design of a dam often determines its rehabilitation design. In no case should a community ever raise dam walls and spillways on their own.

RE-BUILD BREACHED DAM WALLS (AS NECESSARY)

Rehabilitating breached dams involves excavating and scooping material away from the breached area. A core trench is dug to extend into the existing dam wall and facilitate bonding (the core is the centre of the dam wall, compacted to reduce seepage). The trench is back-filled with selected material from borrow areas designated by the engineer. This material is compacted. The entire gap is then back-filled and compacted layer by layer until the wall height is the same as the existing one. Side slopes are trimmed to match the original wall, unless slopes along the entire length of the wall need to be improved.

If dam walls are being re-built, it is useful to set any pipes needed for the future irrigation system in the dam wall at this time (see Section 8).



REPAIR DAM WALL LEAKS

When the dam is leaking, engineers need to first assess whether it is the dam wall and/or the spillway structure that is leaking. Leaks can be caused by poor design and construction methods, decomposing tree roots or ant workings penetrating the earth wall, but may also indicate a problem with the concrete structures. Fixing leaks usually involves excavation and re-filling or earth works, and/or re-plastering of concrete works. In some cases, the dam level may need to be lowered if the problem is on the upstream side of the wall. If a leak can not be fixed, a weir is constructed downstream to collect the water.

REDUCE SEEPAGE

Some seepage along the dam wall and spillway is normal in earth dams. It is important to ensure good drainage of any wet areas at or near the downstream toe of the dam. If these are left unchecked, the embankment toe will become saturated and unstable, a condition which usually results in dam failure. Some methods for reducing seepage include:

- Drains (0.3-0.5m size) are placed along seepage areas, to direct water away from the wall base and towards other areas where the water can be used. Drains are filled with loose stones to avoid collapse.
- Trenches are excavated to collect and drain water in seepage areas. Engineers identify the most suitable location for the drainage trenches.
- Sand, packed stones and rocks are used as filters in wet areas, if drainage is not necessary (i.e., if the dam wall is not threatened).
- Earthworks are compacted to reduce seepage and improve stability.

Seepage water can be used for productive purposes. Sugarcane and bananas can be planted in seepage areas, seepage water can be diverted to a downstream garden area, or weirs for laundry or livestock watering can be built downstream of the dam.

Step 5

PROTECT DAM WALL

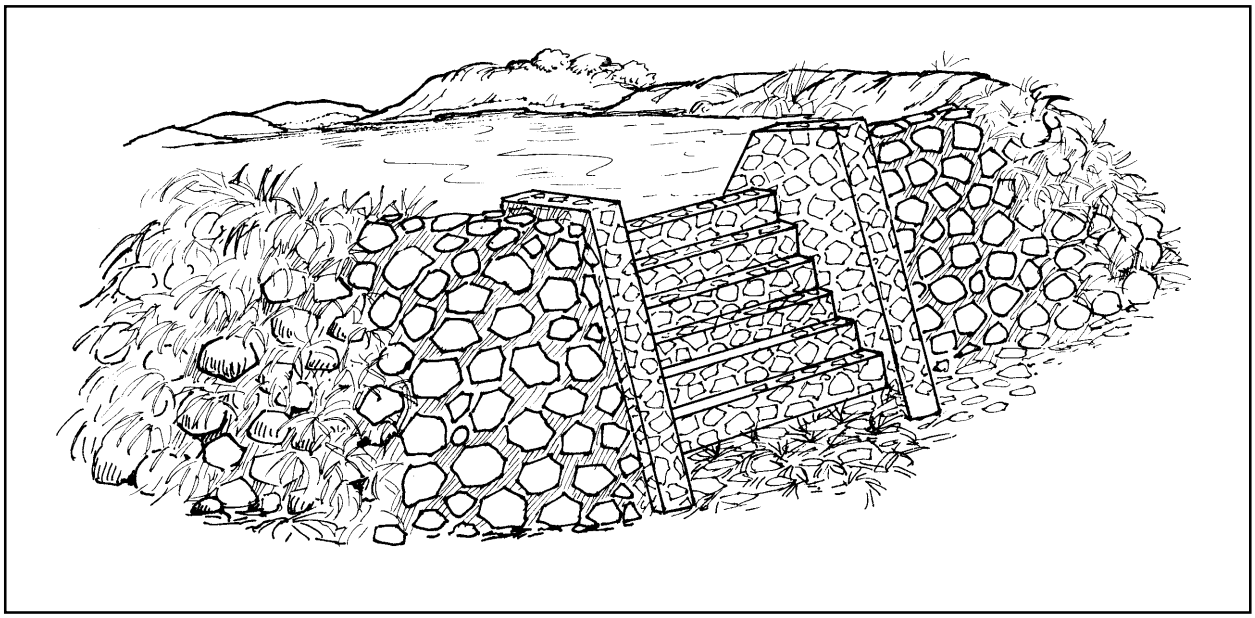
After dam construction works are completed, the dam wall needs to be protected from erosion. At some sites, no construction work is done on the dam wall and spillway, but improvements to the dam wall to protect it from erosion are done at almost all sites. Community work parties are responsible for completing stone pitching and planting, with advice from experts as needed.

STONE PITCHING ON UPSTREAM (WATER) SIDE OF DAM WALL

Stones are placed on the upstream embankment of the dam wall, reaching as low as possible. Stones are placed as close together as possible, stepped, with their flat surfaces overlapping each other. Stone pitching can be done anytime prior to the onset of the first rains.

PLANT GRASS ON CREST AND DOWNSTREAM SIDE OF DAM WALL

Indigenous grasses are planted on the whole downstream embankment of the dam wall. Recommended species include short-rooted spreading grasses like star, couch, kikuyu, and vetiver grass. Grass species preferred by cattle (e.g., bana grass) are not recommended. Planting should be done around October/November and watered before the rains begin. Grass tufts should be planted at approximately 20cm intervals. All planting material is kept damp and shaded. Those faces of the upstream embankment that are not stone pitched (above the high water line) should also be planted. If spillway construction cuts into the bank, this exposed section should be planted as soon as possible. After a few weeks, planted areas should be checked and unsuccessful areas replanted.



ADOPT SYSTEMS FOR LONG-TERM DAM PROTECTION

Activities often focus on the physical works associated with rehabilitation, but without community-based systems for on-going management of this infrastructure, the dam will deteriorate (as it has in the past), and benefits will not be sustainable.

MONITOR AND MAINTAIN DAM INFRASTRUCTURE

Protection and maintenance of the dam works is the responsibility of the entire community, under the management of the DRC. The DRC must have good plans and strong commitments if on-going maintenance is to be successful. The Field Officer works closely with the DRC to ensure they take on this responsibility, often through establishment of a Maintenance Task Force that routinely checks the dam infrastructure. Dam maintenance activities generally include:

Fencing: Check for breaks and repair regularly, so that livestock are not allowed into the micro-catchment area or onto the dam wall (see Section 7 for information on fencing).
Vegetation and termites/ants: Check for new trees and shrubs regularly. Destroy any as soon as they are seen, as roots weaken the dam wall. Termite and anthills can completely destroy a dam and must be checked frequently. If the hill is near the surface, excavate it and destroy the queen and backfill the area with suitable soil. Another method is to close up all visible holes with wads of cotton wool soaked in carbon disulphide (from chemists) or with Dichlorvos (ant kill). Keep sealed for 48 hours.
Dam wall erosion: Check condition of grassed areas, especially after planting, and replant as necessary until a good cover is in place. Stone pitching is checked for cracks or shifting. The first rains will tend to cause gullies or rills on the dam wall (especially if grassing and stone pitching activities are not finished). These should be repaired immediately by ramming in grass sods. Any erosion on or below the spillway should be similarly stopped.
Settlement: As the new works settle, cracks may appear. The dam wall is checked annually, and additional earthwork placed where necessary to prevent rainwater entering. Cracks that follow the length of the dam wall are less serious. If cracks that cross the width of the wall are found, and are wider than 20mm, an engineer should be contacted to inspect.
Debris removal: Remove any large logs or other objects in the dam.
Seepage: If seepage below the downstream toe is accumulating around the wall, add drains (see Step 4). Do not try to plug seepage with soil, but use gravel to stabilise slushy areas.
Siltation: Committees should monitor the success of catchment protection works using tools that measure levels of dam siltation. One method is to place a peg at the top of the dam throwback (at full dam levels), and monitor if the position of this throwback changes annually (if the throwback moves backward, there is more silt in the dam).
De-silting: If siltation is happening at a fast rate, the community may choose to de-silt the dam using locally available materials and manual labour, as is done in other countries. Garden profits could be used to hire tractors and scoops for this purpose.

Training of the appropriate committees and task forces in maintenance activities is on-going. Maintenance planning is included in the training sessions for the Participatory Catchment Plan (see Section 7 and CARE's Community Resources Training Manual).

USER FEES AND OTHER ALTERNATIVES

Most communities set a joining fee. Sometimes this joining fee becomes a monthly or annual fee for using the dam, to raise funds for dam maintenance and repair costs. This fee should be collected from any dam user, regular or seasonal.[1]

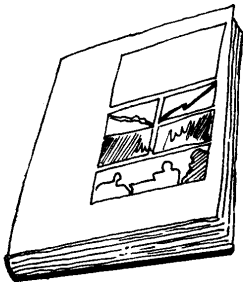
The lack of clear (financial) incentives for dam maintenance means that certain activities sometimes stop after CARE exits. Possible options for sustainability include:

- Using revenue generating activities directly associated with the dam (e.g., fishing permits, livestock watering charges) to motivate and finance dam (and catchment) maintenance (user pays principle)
- Creating better linkages between committees (as discussed in Section 4) to increase the IC's understanding of the need for dam and catchment maintenance, and thus generate financial or other support for these activities from garden sales
- Using paid "contractors" for all maintenance work (dam and catchment), or providing incentives for task forces, to ensure work is completed

Field Officers work closely with the DRC and communities to instil a sense of ownership and responsibility, and ensure maintenance activities are regular by the time CARE exits.

For further information related to small dam rehabilitation, please see:

- *Mutsvangwa et al. Small Dam Design and Rehabilitation*
- *Shaw. A Guide to Design and Construction of Medium-sized Earth Dams in Zimbabwe*
- *Watermeyer. Small Earth Dams and Weirs – Implementation Manual*



[1] Even if committees set a fee that includes seasonal dam users, non-participants can refuse to pay. Zimbabwe's Water Act maintains open access to water sources for all citizens.

Section 6 Annex

Annex 6.1 Example – Final dam design

APPENDIX II : SITE DATA & DESCRIPTION OF THE WORKS

MUSA DAM

B1 SCOPE AND DESCRIPTION OF THE WORKS

This Contract comprises the following Works :

- **Reconstruction of a breached earth embankment dam.**
- **Rehabilitation of all borrow areas etc on completion of the work.**

B2 LOCATION OF SITE AND ACCESS

The site is situated in the Shurugwi District of the Midlands Province on the Surveyor General's 1:50 000 Series Map, No.1930 C3, at UTM Grid Reference SP 933 045. Access is from Cha Cha Cha via the Pakame Mission Road. The site is approximately 7.5km from Cha Cha Cha.

EG CONSTRUCTION
MUSA DAM
CARE INTERNATIONAL - ZIMBABWE

Bill of quantities

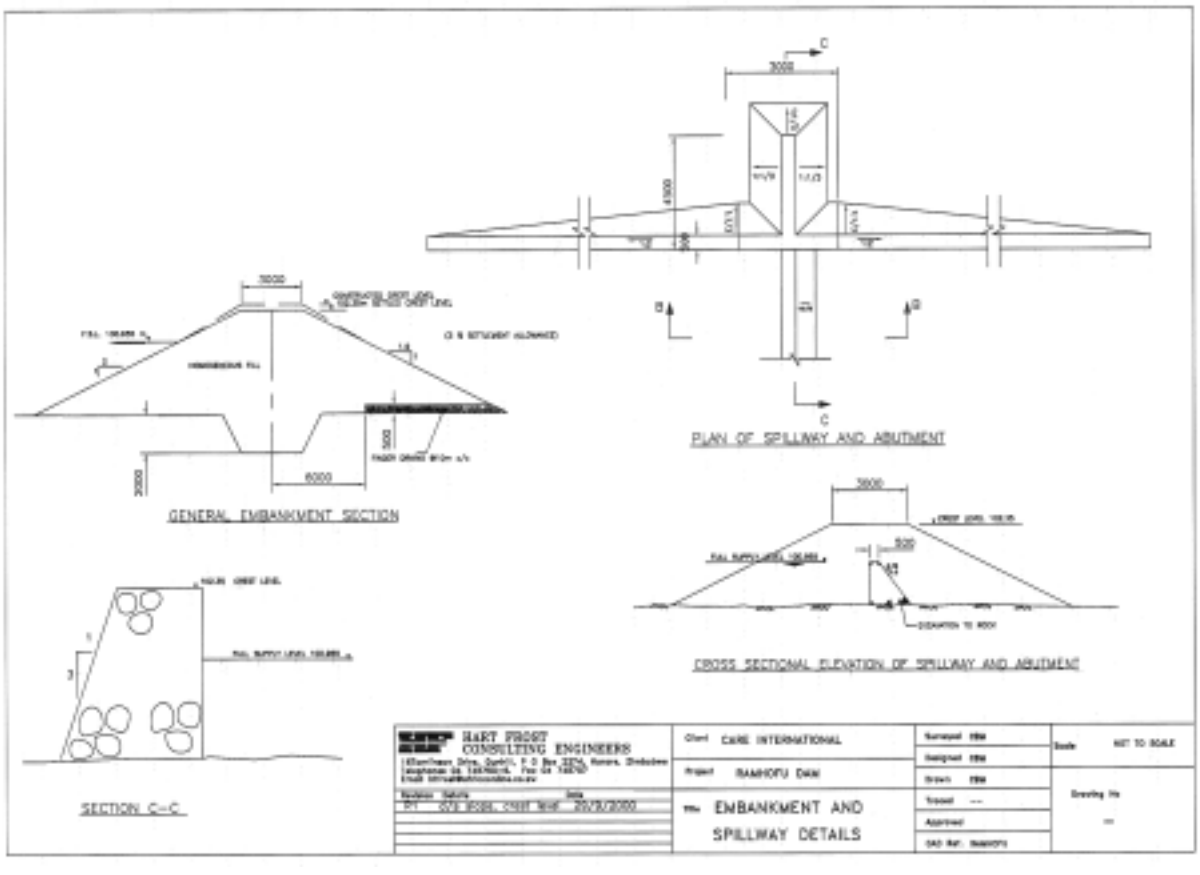
ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
	PART 1 : GENERAL				
1	Establishment and Removal	1	Sum	105,000.00	105,000.00
2	General site running costs	1	Sum	234,000.00	234,000.00
3	Insurance	1	Sum	11,800.00	11,800.00
	TOTAL PART I				350,800.00
	PART II : EXCAVATION & FOUNDATION PREPARATION				
10	Strip & prepare plan area	0.2	ha	29,539.27	5,907.85
11	Strip & prepare borrow area	0.3	ha	29,539.27	8,861.78
12	Excavate riverbed to waste	25	m3	79.18	1,979.50
13	Cut existing embankment to waste	325	m3	79.18	25,733.50
14	Cut existing embankment to works	650	m3	121.98	79,287.00
15	Excavate cutoff trench [soft] to waste	485	m3	83.96	40,720.60
16	Excavate cutoff trench [soft] to works	400	m3	126.77	50,708.00
17	Excavate toe drain			community	
	TOTAL PART II				213,198.24
	PART III : EMBANKMENT				
30	Place & compact backfill cutoff trench	885	m3	141.74	125,439.90
31	Place & compact embankment fill ex borrow	3050	m3	126.53	385,916.50
32	Place fine filter in blanket drain	50	m3	236.69	11,834.50
33	Place fine filter in foundation drain	25	m3	236.69	5,917.25
34	Place fine filter in chimney drain	25	m3	236.69	5,917.25
35	Plant grass on downstream slope		m2	community	
36	Place riprap on upstream slope		m2	community	
37	Masonry spillway cill		m2	community	
38	Masonry spillway abutment		m2	community	
	TOTAL PART III				535,025.40

PART 1 : GENERAL	$	350,800.00
PART II : EXCAVATION & FOUNDATION PREPARATION	$	213,198.24
PART III : EMBANKMENT	$	535,025.40
TOTAL	$	1,099,023.64

EG CONSTRUCTION

MUSA DAM REHABILITATION WORKS PROGRAMME

NO	TASK NAME	QUANTITY	PROD. RATES	Week1	Week2	Week3	Week4	Week5	Week6
1	MOBILISE								
2	CUT EXISTING EMBANKMENT								
3	EXCAVATE CORE TRENCH								
4	BORROW TO FILL								
5	MOVE OFF SITE								




Section
7

SECTION 7

REHABILITATION AND PROTECTION OF CATCHMENT AREAS

OBJECTIVE

To reduce erosion and dam siltation by implementing rehabilitation and protection measures in the catchment area, using a participatory process that involves all users.

STEPS

1. Establish Community Structures for Catchment Protection Activities
2. Raise Environmental Awareness
3. Develop the Participatory Catchment Plan
4. Protect the Dam Micro-catchment
5. Develop Technical Skills for Catchment Activities
6. Implement Catchment Rehabilitation and Protection Measures
7. Manage Livestock and Grazing Areas
8. Adopt Systems for Long-term Catchment Protection

SUMMARY OF THE PROCESS

The catchment area, the hydrological basin of the dam, holds common property resources for which no single group or person is responsible but from which the entire community derives benefits. Without good protection and management, neither the catchment nor the dam can provide benefits to the community on a sustainable basis. CARE and partners facilitate development of appropriate catchment management through a Participatory Catchment Plan process. This process allows primary stakeholders to direct decision-making, share ideas about problems in their catchment area, and draw solutions that become an action plan for implementation by the community and other stakeholders. Once the Participatory Catchment Plan is in place, community-based methods for managing land and water use are introduced, as well as technical interventions for restoring degraded areas. Systems for on-going maintenance are developed for sustainability.

Conflicts related to use and control of the catchment area often arise during development and implementation of the plan. Villages who use the dam seasonally but live further away may not want to participate because they do not benefit from the garden. Households in the catchment area may not want to participate if their homestead will be moved, but their actions have a direct effect on success. Often, many erosion problems stem from livestock, owned in greater numbers by wealthier households who may have more power, control, and decision-making influence. All people using the dam must be included —those from villages far away who use the dam infrequently, and those living within the geographical catchment area who use the dam regularly. Full participation, and good extension and community leadership is essential for addressing catchment management issues, as is the support and involvement of traditional leaders. Non-participants can destroy many of the efforts of the programme if they do not understand how they benefit from a protected catchment.

DETAILED OVERVIEW

Step 1 Establish community structures for catchment protection activities
Review different management structures
Elect or select committee/task force

Step 2 Raise environmental awareness
Conduct training sessions on environmental awareness
Organise an exchange visit (optional)

Step 3 Develop the Participatory Catchment Plan

Step 4 Protect the dam micro-catchment
Build a wire fence around the micro-catchment and dam wall
Establish a live fence around the micro-catchment and dam wall

Step 5 Develop technical skills for catchment activities
Assess capacities within the committees and community
Conduct technical training

Step 6 Implement catchment rehabilitation and protection measures
Physical protection measures
Vegetative protection measures
Nursery establishment

Step 7 Manage livestock and grazing areas
Grazing management
Grazing land improvements
Alternative watering points

Step 8 Adopt systems for long-term catchment protection
Monitor and evaluate Participatory Catchment Plan activities
Maintain catchment protection measures
Enforce rules and control use

ESTABLISH COMMUNITY STRUCTURES FOR CATCHMENT PROTECTION ACTIVITIES

Just as committees are in place to manage dam rehabilitation and irrigated garden activities, a community management structure responsible for catchment rehabilitation and protection activities is also created.

REVIEW DIFFERENT MANAGEMENT STRUCTURES

Community management structures for catchment protection activities may have already been formed during initial mobilisation (see Section 4). Sometimes a community elects a separate Conservation Committee at the same time as the DRC and IC. In other cases, smaller committees or task forces are created later using elections or through selection by the DRC and IC. Some communities may already have a group in place involved in local environmental protection issues that wishes to take on the catchment protection role.

Whatever option is chosen, this management structure is responsible for leading the Participatory Catchment Planning process and catchment rehabilitation activities, as well as agronomy activities (see Section 9). Participants should be clear on the roles and responsibilities of the different committees and/or task forces and committee positions (see Annex 4.3 and 4.4).

ELECT OR SELECT COMMITTEE/TASK FORCE

If a Conservation/Agronomy Committee is being elected, the Field Officer reviews the key issues from the “Community Resources Training Manual” —Module 1, Lesson C “Leadership Concepts” (as necessary)— and helps make arrangements for committee elections. If the DRC and IC are selecting a task force to assume catchment responsibilities, participants are asked for nominations.

Step 2

RAISE ENVIRONMENTAL AWARENESS

Before catchment rehabilitation and protection activities start, participants need a good appreciation of resources and processes in the natural environment, and how their actions affect sustainability.

CONDUCT TRAINING SESSIONS ON ENVIRONMENTAL AWARENESS

Working with the appropriate committee(s) and/or task force, the Field Officer organises a session to train the community on environmental issues. The content follows the "Community Resources Training Manual" —Module 3 "Environmental Awareness"— which covers the following topics:

- Types and uses of local natural resources
- Observing change
- Identifying cause and effect
- Human impact

The purpose of this training is to introduce a basic understanding of environmental processes and linkages, emphasise the problem of environmental degradation, and motivate people to make a difference in how they use and manage their natural resources. It is critical that the community understands the root causes of the problems they see, as this will determine whether they use the most appropriate solutions and achieve success, or whether they only treat symptoms and ultimately fail.

The Field Officer, working with partners such as Department of Natural Resources, Forestry Commission and Agritex, may need to hold a number of these training sessions in the social catchment. The social catchment is the area encompassing all dam user groups; it is usually larger than the geographic catchment because it includes both regular and seasonal dam users. Because this is the first training session before catchment rehabilitation and protection efforts begin, it is important that all members of the social catchment are reached.

ORGANISE AN EXCHANGE VISIT (OPTIONAL)

Farmer-to-farmer exchanges can also be used to demonstrate the importance of these issues. Exchange visits can be held at communities where catchment protection works have already been implemented, or at homesteads where soil and water conservation practices are used. Alternatively, visits can be made to nearby areas where protection is not done and land and water resources are severely degraded.

DEVELOP THE PARTICIPATORY CATCHMENT PLAN (PCP)

A community-based management plan for protecting the dam catchment provides the information, organisation and decision-making procedures needed for communities to better control their resources.

The Conservation/Agronomy Committee, with support from CARE and partners, leads development of a work plan for rehabilitating the catchment area. The Participatory Catchment Plan (PCP) process helps them identify priorities and plan solutions. All households in the social catchment (i.e., regular and seasonal dam users) should be involved, as well as the Technical Advisory Committee. A series of meetings are held to assess catchment condition and uses, identify problems, causes and solutions, and detail an action plan. The content follows the "Community Resources Training Manual" —Module 4 "Participatory Catchment Planning and Management"— which covers the following lessons and topics:

- Lesson A: Catchment Assessment
  - Definition of the catchment
  - Catchment assessment exercises
  - Transect walk

- Lesson B: Developing and Implementing the Plan
  - Problem identification and prioritisation
  - Action plan
  - Monitoring and evaluation
  - Enforcement and control

CARE has found that the Participatory Catchment Plan develops interventions that fit a sustainable, community-management approach. Although the PCP takes more time, organisation and logistics, it allows greater understanding and initiative by participants. Special efforts need to be taken to ensure people from all segments of the community are involved (e.g., seasonal users, vulnerable households, etc.).

The assessment exercises are designed to inspect all aspects of the catchment area and identify problems threatening the community's common property resources. Problems usually include causes (e.g., high population, poor agricultural practices, uncontrolled grazing), as well as consequences (e.g., many gullies, eroding stream banks, low crop yields, silted dam). Solutions generally fall into two categories:

- Implementing rehabilitation/protection measures designed to reduce dam siltation, such as fencing, physical soil and water conservation structures, tree and grass planting, etc. These solutions require training, materials, community labour, and maintenance.
- Developing land use controls, such as stopping tree cutting, controlling grazing, stopping stream bank cultivation, etc. These solutions require more awareness, community agreement, effective enforcement, and conflict resolution.

For each solution, an action (or work) plan is developed that identifies activities, responsibilities (including those of other institutions), time frame, resources required, and maintenance activities. An example of a PCP is included in Annex 7.1.

PROTECT THE DAM MICRO-CATCHMENT

The micro-catchment needs to be protected from human and livestock activities, to reduce erosion and siltation and extend the dam life. Fencing should begin only after community awareness is raised and participatory catchment planning processes have begun. All users must understand the need for fencing if it is to be successful.

BUILD A WIRE FENCE AROUND THE MICRO-CATCHMENT AND DAM WALL

If all dam users are not included in the PCP process, people who do not support its goal will cut the fence around the micro-catchment.

The area to be fenced includes the land immediately around the dam, the dam wall, and the spillway right up to where flood discharge is returned to the stream. Fencing materials and tools (treated gum poles, wire, droppers) are provided by CARE, and manual labour and local resources are provided by the community. Standard poles (1.5m high) are put in at 10m intervals, and require 30cm holes. Corner posts require 50cm holes. The community digs holes while they wait for fencing materials to be delivered. Poles are secured with concrete. The community does the wire straining (4-6 lines of wires). One wire is done at a time, and wire is fixed using U nails. Droppers are tied to the fence at 5m intervals for strengthening. Locked gates are fitted.

ESTABLISH A LIVE FENCE AROUND THE MICRO-CATCHMENT AND DAM WALL

Live fencing is a preventative maintenance measure meant to ultimately replace the original wire and pole fence. Live fences mean fewer trees are cut for fencing materials from the catchment area and fence maintenance is minimised (and less expensive). Live fences also provide other uses such as fodder, fibre, food, etc. depending on the species, provide shade and act as a windbreak. Various plants can be used for live fencing depending on local environmental conditions and use. Sharp pointed sisal is most commonly used, and is planted at 0.3m intervals about 0.5m inside the wire fence. Small trees can also be planted, with branches woven together to make a fence over time. Once full grown, live fences planted with hedges or bushes should be trimmed in an inverted “V” shape, using cuttings as compost or mulch.

DEVELOP TECHNICAL SKILLS FOR CATCHMENT ACTIVITIES

Once actions are identified in the PCP, the community requires technical training on how to implement rehabilitation and protection measures.

ASSESS CAPACITIES WITHIN THE COMMITTEES AND COMMUNITY

The Field Officer and relevant extension workers determine what skills the community already has before they begin their technical training programme. A training needs assessment helps specify training content, extension methods, timing of lessons, amount of training, and follow-up that is most appropriate for the audience. The Field Officer does a participatory needs analysis using different methods to gather the information, including group discussions and exercises, interviews, questionnaires, observation and documents. The characteristics of community members (e.g., education, wealth, attitudes, motivations, etc.) also provide clues as to the training needs and the best content and process to follow in the training programme. During this assessment, the Field Officer may identify people with significant knowledge about soil and water conservation who may be appropriate farmer-to-farmer trainers.

CONDUCT TECHNICAL TRAINING

The Field Officer works with the committee chairperson(s) and the Community Mobiliser(s) to schedule times for the training sessions. The Field Officer informs other partners involved in the training of the time and place well ahead of schedule. Training is done first on interventions that are of highest priority in the Participatory Catchment Plan. Different methods for technical training are detailed in the “Community Resources Training Manual” —Module 5 “Technical Extension”— including:

- Farmer-to-farmer training
- On-the-job training
- Demonstrations
- Trials / farmer experimentation
- Exchange visits

Technical training often benefits only men, who have more contact with extension workers. Targeted training for women is essential to help them overcome participation barriers, improve skills, and expand catchment protection work. 75% of farmers in Communal Areas are women —special attention to designing and implementing gender sensitive training is critical for long-term sustainability.

The purpose of this module is to provide general guidance on different extension methods for technical training. The details of how to construct and implement protection measures are found in other reference materials. Ultimately, the use of different extension methods at different times and with useful follow-up should increase adoption and replication of technologies or products that are appropriate for the farmers and the problems they face.

Technical training in catchment protection measures continues throughout implementation. Field Officers provide training in close collaboration with extension workers from Department of Natural Resources, Forestry Commission, Agritex, and others.

Step 6

IMPLEMENT CATCHMENT REHABILITATION AND PROTECTION MEASURES

This guidelines document describes some techniques for rehabilitation and protection. Many other methods may be used, depending on site-specific needs; the community and Field Officer seek technical assistance from extension workers and partners. Various information resources are available (see reference list).

Most physical and vegetative measures are appropriate for common property catchment lands (e.g., grazing areas, micro-catchment, roads, stream banks, etc.) as well as arable and homestead areas. Other in-field techniques are discussed in Section 9; in-field methods to reduce erosion from arable areas within the dam catchment area should be encouraged.

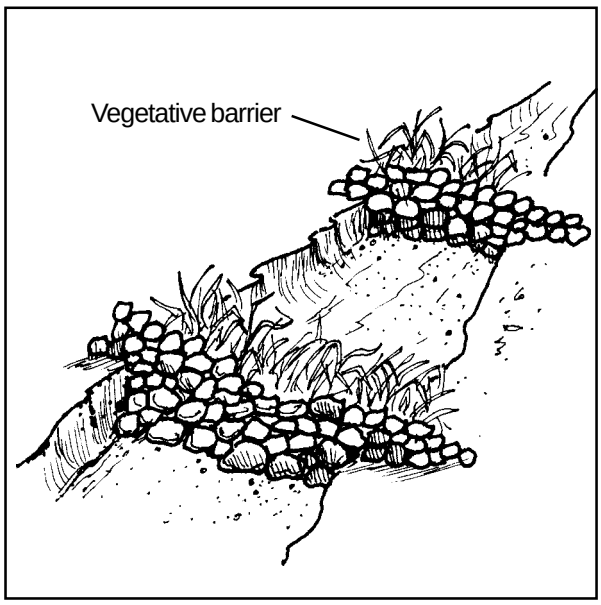
Prior to construction of protection measures, the location of structures and plantings is pegged (with necessary technical assistance), locally available resources are gathered and ferried to the site(s) by the community, and non-available resources are procured and transported to the site by CARE. CARE provides basic tools to help the community with their tasks. In support of a sustainable, community-management approach, the focus is on technologies that use locally available materials.

PHYSICAL PROTECTION MEASURES

Physical structures in erodible, infertile sodic soils (very sandy) have a high rate of failure and need to be carefully designed, selected and positioned.

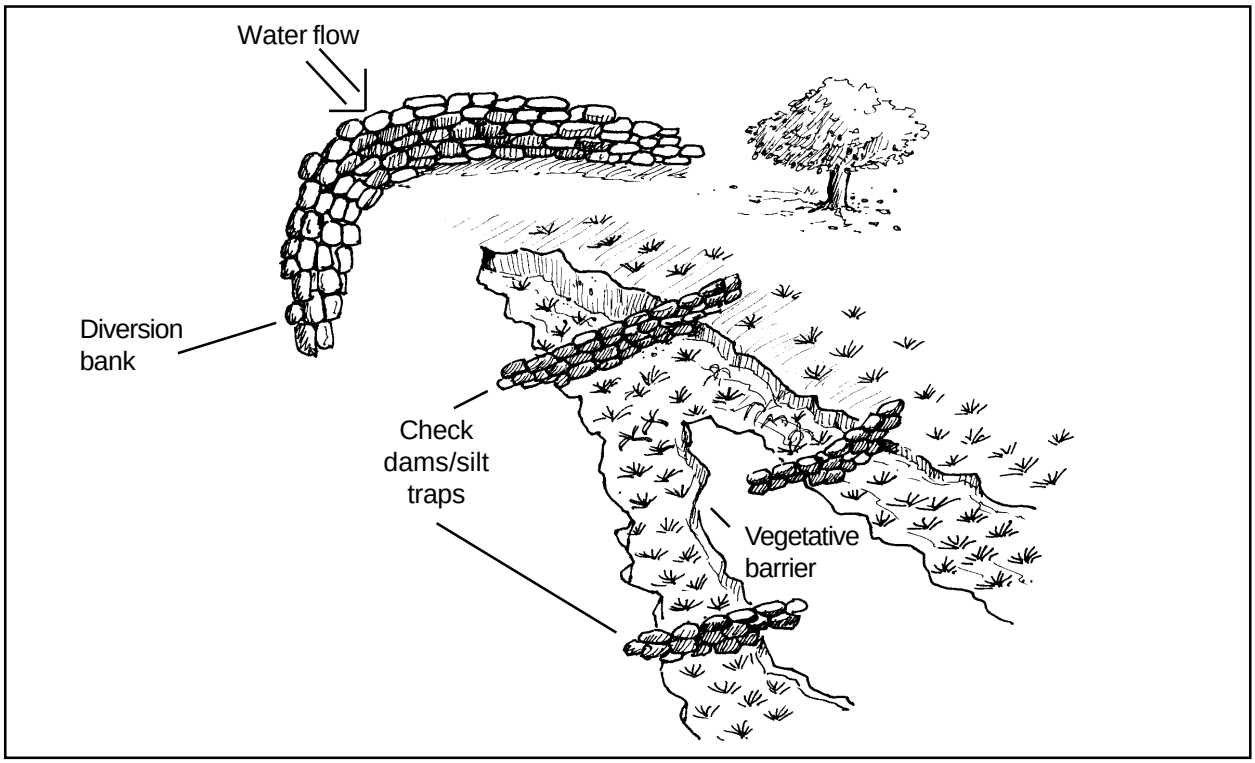
Masonry weirs: Weirs are constructed in the main stream or river channels to trap silt and store reasonable amounts of water, which can be used for domestic or agricultural purposes (Section 11).

Check dams (silt traps): Check dams, or silt traps, are built upstream of the dam to reduce water speed and trap silt. They are usually built of stone, sometimes wrapped in mesh wire for greater strength. Silt traps can be built with brushwood, but run the risk of being washed away during heavy rains. The flow and size of the watercourse determine the width of the silt trap (normally 1-2m). A foundation is dug; the base of the silt trap should be larger than its top, and larger rocks should be used on the bottom. The silt trap should be at least as high as the stream banks, with a spillway left in the middle in case of high water levels. The edges around the silt trap should be stone pitched to minimise erosion. Silt traps require de-silting over time, or can be planted with



vegetative barriers. It is useful to build silt traps all the way up a watercourse that is leading to a gully, as part of gully control and reclamation.

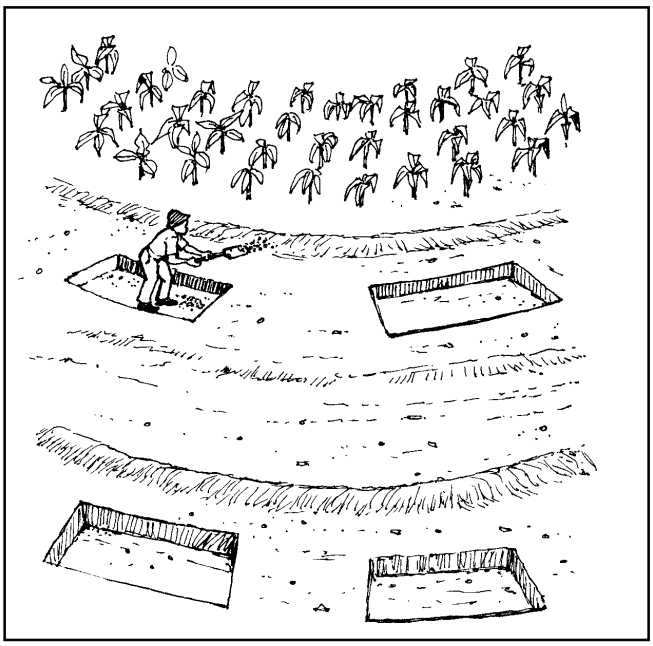
Diversion banks: Diversion banks are built to divert water away from a channel and onto a flat surface, to reduce water speed and encourage deposit of silt. They are most useful for controlling gullies (or potential gullies) on gentle slopes, where they divert water above the gully head and onto the flat land on either side of it. Banks are usually 1m wide and 15cm deep and made of rocks. Their shape is an inverted "V" with the arms facing downstream. The length of the arms depends on the width of the watercourse. At the end of the arms, the sides should be stone pitched to avoid erosion. The banks should divert water as far away from a gully as possible.

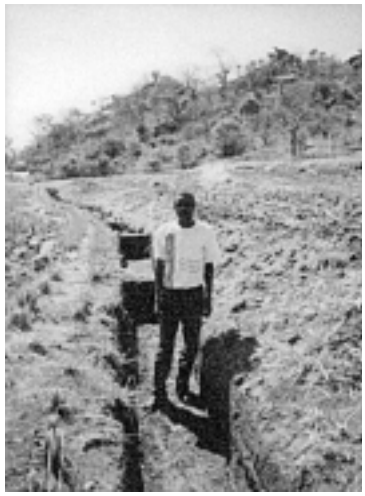


Gully control and reclamation: A gully develops when runoff water is allowed to flow very fast on waterways or depressions. As it flows downstream it erodes the soil, more so if the bed is not protected by vegetation or if soils are very sandy. Upstream of the gully head, structures such as silt traps, storm drains, and diversion banks can be used to stop or reduce the flow of water into the gully. The gully head itself is sloped and stone pitching and grass planting protect the face. If water is entering the gully from the sides, these sides are also protected by sloping them, stone pitching, and grass planting. The gully bed itself is then protected by structures that slow down the flow of water and encourage the deposit of silt (and subsequent growth of vegetation). Physical and vegetative check dams can be built across the gully bed for this purpose. Once gullies are controlled, reclamation methods include back filling with soil and planting grasses and indigenous plants, shaping the gully into a watercourse by trimming sides and planting runner grass, or applying rich soil, manure, fertiliser, etc. on the gully bed and sides to encourage plant growth.

Contour ridges (with storm drains): Contour ridges are built to reduce storm water flow by collecting it and channelling it (via storm drains) into water courses or letting it infiltrate into the soil. Contours must be properly surveyed, or community members should be trained in the use of a line level or A-frame level. Some farmers put cross-ties in the contours to reduce the speed of water and encourage silt deposition (see Section 9).

Infiltration pits: If in-field water conservation is required, infiltration pits are dug in the contour bands at intervals of 10m and depth of 75-100cm. These pits allow for silt deposition and water storage instead of diverting water out of the contour. The pits need to be re-dug (or de-silted) quite often.





Dead-level contours: A dead-level contour looks the same as the normal contour ridge, but is not graded, to keep water in the drain instead of diverting it away. This technique harvests water and is more effective when used with infiltration pits.

Fanya juus: Fanya juus are embankments on dead or degraded contours made of soil or stones, with a basin at the lower side. Soil is thrown upslope, instead of downslope as is done for contour ridges. These structures keep the water and soil on the field instead of diverting it away. The trapped soil eventually forms a bench terrace (i.e., a more level field). These structures are most successful on sloped fields. Bananas can be grown in the channel.

VEGETATIVE PROTECTION MEASURES

Vegetative barriers provide permanent protection of the catchment area against erosion. Fast-growing plant roots hold soil together, and slow down surface water flow. Grasses and bushes used to control erosion and reduce dam siltation often provide secondary benefits, such as fodder for livestock, thatching materials, food, etc. Vegetative barriers can be planted:

- Upstream of silt traps to trap sand, or in silt traps or weirs once they have filled up with silt
- In fields as grass strips
- As a hedge along dead-level contours or contour lines
- Along gully sides and bases
- Around dam banks
- Along river courses
- As live fencing

The type of species chosen for vegetative barriers depends on the use, terrain and rainfall in the area. Some species are more palatable to livestock, and should not be planted in areas where cattle are restricted. Common species include:

- Vetiver grass: The most common vetiver (*Vetiveria zizanioides*) is propagated vegetatively using fresh plant material (instead of seeds), so communities can easily develop local stocks.
- Couch grass, star grass and kikuyu grass: These fast-growing, short-rooted spreading grasses are useful for dam wall protection, gully reclamation, and erosion control. These grasses generally prefer high rainfall areas.
- Sisal: Sisal is often used in live fencing, and provides a source of fibre. It prefers low rainfall areas.
- Bana grass: This species is palatable to livestock so should not be used in areas where cattle are restricted (e.g., in the dam micro-catchment or on the dam wall). It prefers high rainfall areas.
- *Leucaena* and *Sesbania* species: These tree species are useful in improving grazing land, and for soil improvements.

Trees have multiple uses in catchment protection. Tree cover reduces the power of raindrop erosion, roots bind soil particles together, and roots and leaves add organic matter to the soil. Some trees are palatable to livestock and can increase the carrying power of fields and reduce over-grazing. They provide a source of firewood and construction material, fruit trees have nutritional and economic value and some have medicinal uses. Trees also require minimum care once established.

Run-off orchards: Exotic and indigenous fruit trees are established around homesteads using rainwater harvesting techniques to control and concentrate surface water at the tree base. Training is provided to host farmers on the layout of orchards for maximising water harvesting, the use of A-frames, digging planting pits, and using compost material. These farmers then train other farmers.

Natural woodlots: Fencing off designated areas to allow indigenous trees to grow undisturbed by livestock and humans rehabilitates natural woodlots. The fence can be moved to another area after the original woodlot has been rejuvenated.

Some communities have individual ownership of trees, while others develop the woodlot as a common property resource that provides material or income to project activities. In either case, materials should not always be provided free of charge, in order to promote ownership and long-term protection. Tree planting has been more successful when done at household level rather than in the community catchment area.

Plantation woodlots: Gum tree plantations are developed to provide a local source of firewood, construction material, etc. *Eucalyptus camaldulensis* or *citrodora* is most suitable for Natural Region III, IV and V. Plantation woodlots can also be established with indigenous trees, which have multiple purposes but grow slower. Gum (and other exotic) tree woodlots should be established in suitable areas; gum trees use a lot of water because they are fast-growing, but also have roots that reach deep layers of the soil. Plantation woodlots and agro-forestry systems developed at the base of hills help absorb the high runoff from these areas and improve spring seepage. The woodlot can be located inside the fenced micro-catchment to protect seedlings from livestock. Alternatively, a wire fence can be placed around a woodlot and re-used, or a live fence can be planted around a permanent woodlot. Chemicals and natural remedies can also be used to avoid damage from pests, disease and livestock grazing. A fireguard should be established around the woodlot in May.

NURSERY ESTABLISHMENT

Nurseries are developed to ensure planting material is available locally over the long term. Both individual and community nurseries are established; in either case, they can support project activities and/or provide income-generating opportunities. Nurseries should be established near a permanent water source, and must be protected from livestock; fenced gardens are often good sites for nurseries. A north-facing slope provides the most sunshine, and windbreaks should be used to protect the nursery. Trees and plants can be grown from seeds or seedlings. Hard seeds can be collected and stored in a dry, cool place. Watering must be closely monitored, as it depends on the weather. Seedlings can be damaged after even 1 day without water during very hot temperatures. Watering should be regular, and should decrease towards transplanting time. Records are kept for all nurseries.

Vetiver grass growing areas should be established throughout the catchment area to facilitate delivery and use. Vetiver can be propagated vegetatively; one planting of vetiver can reproduce itself into at least 10-25 slips per year through propagation. When taking vetiver plants from the nursery, at least 1 new slip from each plant taken should be planted to maintain this stock.

MANAGE LIVESTOCK AND GRAZING AREAS

Livestock can cause significant erosion and dam siltation in the catchment area. Fencing the dam and other protection measures help decrease impacts, but other methods of controlling grazing impacts are also included in the PCP.

GRAZING MANAGEMENT

Grazing in the catchment area is planned to both protect the dam and maximise the use of available grazing areas. Grazing land can be managed in different ways:

- Continuous light grazing of the catchment area
- Rotational grazing (providing a resting period to different grazing areas)
- Controlled grazing of areas prone to erosion (e.g., sodic soils, wet soils, stream banks, steep slopes, forest areas and infertile or shallow soils)
- Controlling the number of livestock allowed on grazing areas
- "Zero" grazing (feeding livestock in pens)

Instead of relying on herding, paddocks can be built to isolate grazing areas. Traditional leaders can designate certain areas within the catchment as grazing lands. Therefore, if traditional leaders are participating in and supportive of the programme, grazing can be more easily managed. Grazing management actions are recommended in the PCP, and approved by traditional leaders.

GRAZING LAND IMPROVEMENTS

Improvements can be made to the quality and quantity of grazing material through planting. Trees and shrubs that provide fodder (e.g., bana grass, *Leucaena* and *Sesbania* spp.) can be protected and planted as part of catchment rehabilitation, in areas where cattle are allowed to graze. Livestock fodder can also be planted in arable areas (e.g., growing fodder in pasture furrows). Soil improvements can improve grass quality and quantity. Humps can be built in cattle tracks to reduce the flow of water.

ALTERNATIVE WATERING POINTS

Because the dam is fenced off, alternative watering points are developed for livestock. These watering points are usually built downstream of the dam spillway, but watering points further upstream of the dam are sometimes needed if the catchment (or the social catchment using the dam) is very large. The construction of weirs and troughs is discussed in Section 11.

ADOPT SYSTEMS FOR LONG-TERM CATCHMENT PROTECTION

Often, the focus of PCPs is on implementation of conservation measures. But without community-based systems in place that support on-going management, protection will not be sustainable.

MONITOR AND EVALUATE PARTICIPATORY CATCHMENT PLAN ACTIVITIES

Once the PCP is developed, the community decides who is the custodian of the plan (e.g., Conservation Committee, the TAC, Agritex, etc.). The situation differs —the community should decide what is best for itself. Multiple copies of the PCP should be available in the community, from different people.

Regular monitoring of the PCP ensures work is done and materials reach destinations, and identifies any problems and whether results are meeting expectations. Monitoring is done regularly (every 3 to 6 months). Some communities monitor their work through regular meetings —quarterly, bi-annually or annually— either by the Conservation Committee alone, or during a larger community meeting. Either way, regular feedback should be provided to participants.

Communities sometimes compete in provincial and district natural resource competitions to promote their activities and evaluate their success. Competitions amongst dam sites could also be arranged.

An evaluation of different erosion structures showed the following community preferences:
- *100% for vegetative barriers*
- *92% for gullies with stones*
- *91% for infiltration ditches*
- *90% for check dams*
- *90% for fanya juus*
- *84% for diversions banks*
- *78% for dead-level contours*
- *66% for brushwood check*

Evaluations let us learn from past mistakes and increase self-reliance and strength. The successes and weaknesses of the PCP should be evaluated every year after implementation since some changes will only be realised after a long time. Before evaluations can be done, the community needs to identify their own criteria for success. Regular meetings can review the effects of catchment protection to date (e.g., level of dam siltation) and the need for additional catchment protection activities.

MAINTAIN CATCHMENT PROTECTION MEASURES

Many conservation measures require constant repair and maintenance, especially physical structures —vegetative measures are preferred because they require little or no maintenance. Catchment area maintenance activities include:

- Checking the condition of physical structures (e.g., silt traps, diversion banks, contour ridges, etc.) for any damage, and repairing where necessary
- De-silting physical structures including silt traps, weirs, etc.
- Re-planting vegetative barriers where plants have been damaged

Maintenance is done seasonally (before and after the rains), and scheduled as part of community work plans. A Maintenance Task Force is often established to assume this responsibility, keep records and report back to the Conservation Committee or DRC. Dam maintenance activities (Section 6) can be included in the PCP maintenance schedule.

ENFORCE RULES AND CONTROL USE

Communities produce good plans, but without any enforcement measures many of them are ineffective. Once the community produces a plan, ways of ensuring implementation are selected, with penalties spelt out for offenders. Regulations are developed to control poor land and water use practices in the catchment area, such as tree cutting, overgrazing, stream bank cultivation, fishing, and soil disturbance (e.g., cultivation, brick moulding). The community works with extension workers, traditional leaders, the RDC, and even the Zimbabwe Republic Police to identify appropriate and enforceable penalties to include in the PCP. Penalties can only be developed with a clear understanding as to why people violate rules, what benefits they receive by doing this.

Key elements for enforcement in the catchment area include:

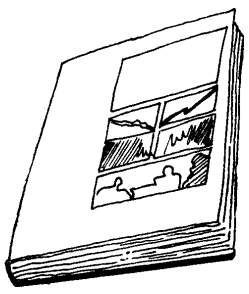
- *By-laws or constitutions to provide direction and cohesion amongst participants, and protection from the actions of non-participants*
- *Economic incentives to encourage enforcement (e.g., incentives for dam police)*
- *Involving households located near the dam in enforcement*
- *Involving the social catchment in developing management plans and enforcement tools*
- *Involving traditional authorities*

Rules and penalties on catchment use are incorporated into the constitution. However, as discussed in Section 5, by itself the constitution has minimal power, and non-participants —frequently the worst offenders in the catchment area, especially if they have been excluded in any way— are not bound by this agreement. Enforcement of catchment rules depends on the support of traditional leaders. The traditional system has ultimate authority over land use in the Communal Areas. Therefore, the Technical Advisory Committee must be involved in establishing these rules, and agree to enforce them as needed. Ideally, RDCs can adopt these rules into formal by-laws within the elected government system, but this is a long process.

Regular maintenance activities, or special community policing, can check for contravention of any catchment regulations.

For further information related to catchment rehabilitation, please see:

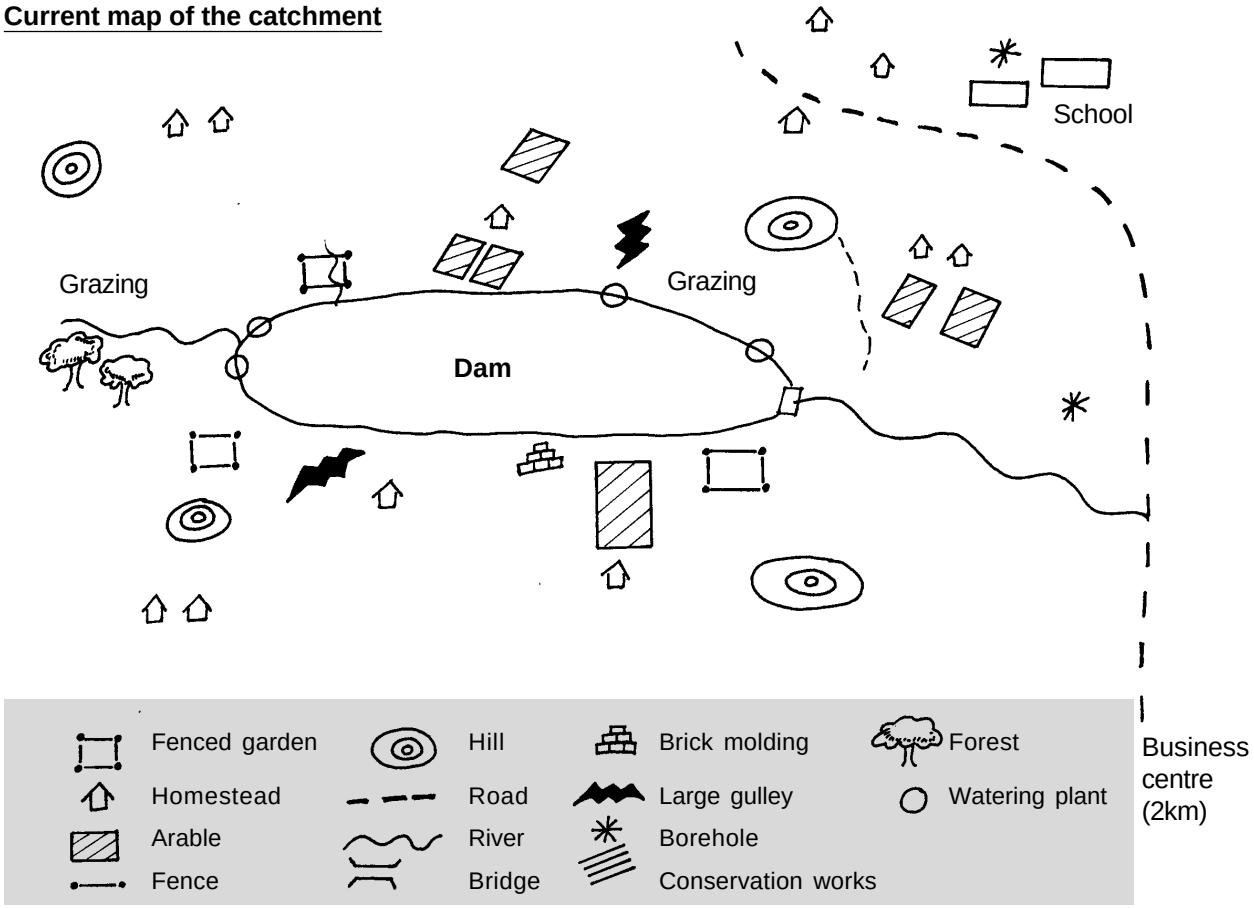
- *Connover. Trees for Zimbabwe*
- *Epstein. Raising Trees from Seeds and Cuttings*
- *Epstein. Growing Fruit Trees*
- *Ministry of Public Service, Labour and Social Welfare. Community Action Programme, Natural Resources Management Handbook*
- *Silsoe Research Institute and CARE. Participatory Catchment Planning Guidelines*
- *Swedish Co-operative Centre. Self Study Material for Drought Mitigation in Rural Zimbabwe*
- *ZFU/Agritex. Introduction to Good Land Husbandry (technical reference booklets)*



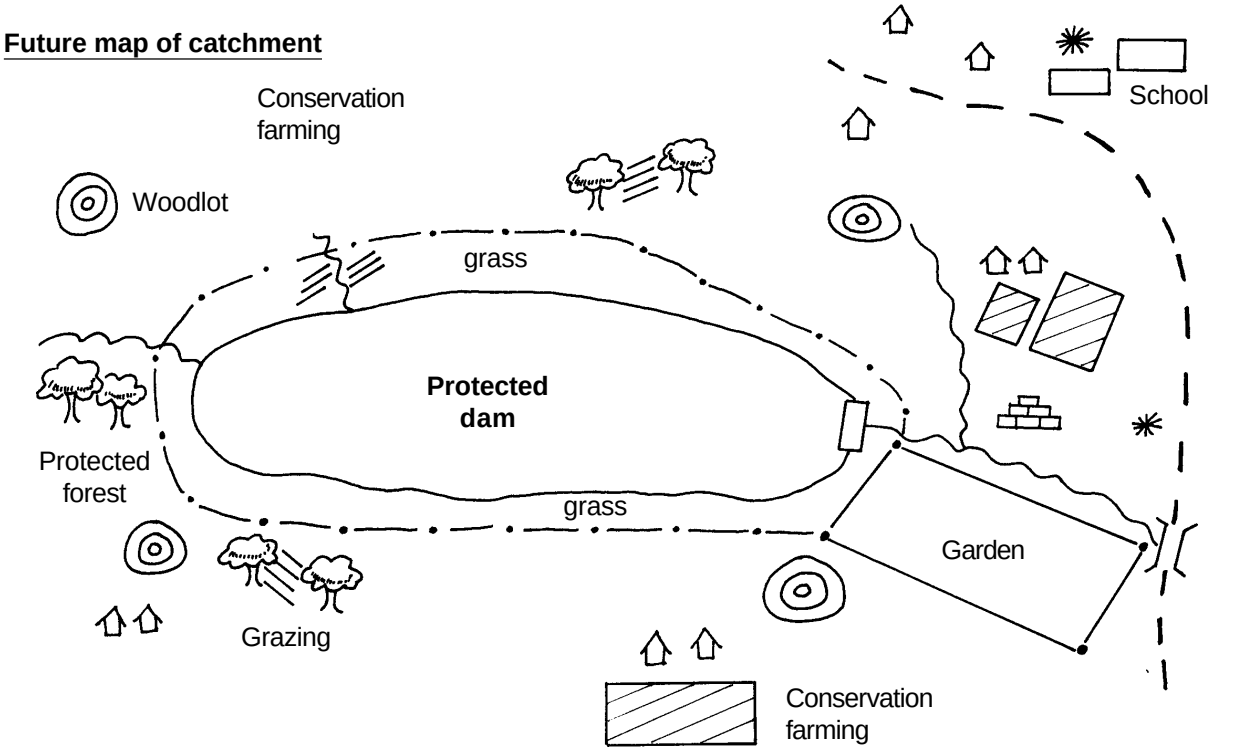
Section 7 Annex

Annex 7.1 Example – Participatory Catchment Plan

Current map of the catchment



Future map of catchment



Map	1965 (year dam built)	1999 (today)	2015	Measures to be taken
Men's Map	Few houses few people Lots of trees (preventing erosion) Dam holds a lot of water Little siltation	More houses More people Streambank cultivation Lots of erosion and dam siltation Lantern camara more widespread than indigenous trees Dam wall raised 10 boreholes in area because water feared to be a problem	A lot more people with few fields per household Lots of streambank cultivation	• Resettlement • Proper land use planning • Destruction of *lantana camara* • Regular maintenance of fencing
Women's map	(Most women came to the area and many were not born at this time) People used to dig for water	More houses Some boreholes Gardens in the catchment Fields close to the dam and waterways Main problems No grazing No firewood No poles Increasing gullies Siltation due to people	A lot more Lantana camara Gum trees planted Cultivation everywhere Lots of houses Widening rivers and lots of siltation	1. Need to spray lantana (donor assistance??) 2. Gully reclamation required (CARE is asked to provide transport to carry stones) 3. Grass barriers needed for erosion control 4. Workers should be paid 5. Local leaders asked to settle people in good areas

Natural resource use	Main users	% using NR	Season of use	Labour requirements		Household benefit (0-5)			
				Score (0-5)	Rank	For food	Cash	Total	Rank
Grazing	Young boys	30	All year	5	1=	5	5	10	1=
Fruits	Everyone	100	All year	0	6=	1	2	3	5
Brick making	Men – women	100	May-Sept	3	3=	2	3	5	4
Gardening	Women	100	Marc-Oct	4	2=	4	3	7	3=
Thatching	Men	100	July-Sept	2	4=	3	2	5	4
Poles	Men – young boys	100	All year	2	4=	2	0	2	6=
Cropping	Everyone	100	All year	5	1=	5	5	10	1=
Fire wood	Women – girls	100	All year	1	5=	0	0	0	8
Construction material	Men – women	100	All year	2	4=	0	2	2	6=
Craft	Men – women	100	Aug-Oct	1	5=	0	1	1	7
Domestic water	Everyone	100	All year	3	3=	5	5	10	1=
Fishing	Men –boys	100	All year	2	4=	2	0	2	6=
Watering animals	Boys	100	All year	1	5=	3	5	8	2
Watering gardens	Women- girls	100	Marc-Oct	4	2=	4	3	7	3=
Washing	Everyone	100	All year	0	6=	0	0	0	8
Medicine	Men - women	100	All year	0	6=	0	2	2	6

A score of 0-5 was used to rank labour input as well as household benefits, 0 being the least important and 5 being the most important.

This demonstrated the relative importance of each resource, in terms of labour required and benefits to each household an provided the following overall ranking

Rank	Labour required	Rank	Benefit to household
1	Grazing and cropping,	1	Grazing, cropping and domestic water
2	Gardening and watering gardens	2	Livestock watering
3	Brickmaking and collecting domestic water	3	Gardening and watering gardens
4	Poles, construction material and fishing	4	Brickmaking and thatching
5	Firewood, crafts and watering animals	5	Collecting fruits
6	Collecting fruits, washing and collecting medicine	6	Poles, construction material and fishing
		7	Crafts
		8	Firewood and washing

Identification of the main activities taking place in the catchment

Resource used	Uses	Individual property	Common property
Trees	Firewood	*	*
	Medicine	*	*
	Poles	*	*
	Roofing poles	*	*
	Fruits	*	*
	Carving	*	*
	Shade	*	*
	Wind shield	*	*
	Aesthetic value (*kushongedza nyika*)	*	*
	Air circulation	*	*
	Fibre	*	*
	Protecting soil	*	*
Stones	Construction material	*	
	Grinding stones	*	
	Protecting soil	*	
Grass	Thatching	*	
	Manure	*	
	Grazing	*	
	Soil protection	*	
Water	Drinking, domestic consumption	*	
	Use in construction	*	
	Irrigation of crops and gardens	*	
Grazing areas	Pastures/grazing for livestock		*
	Cash when livestock is sold	*	
	Meat/food from livestock	*	
Arable'fields	Crops/food	*	
	Cash when crops are sold	*	
Soil	Brick molding		*
	Pottery		*
	Raising crops		*
	Graves		*
Reeds	Basketry		*
	Soil protection		*
Fish	Food		*
	Cash when the fish is sold		*
	Medicine		*

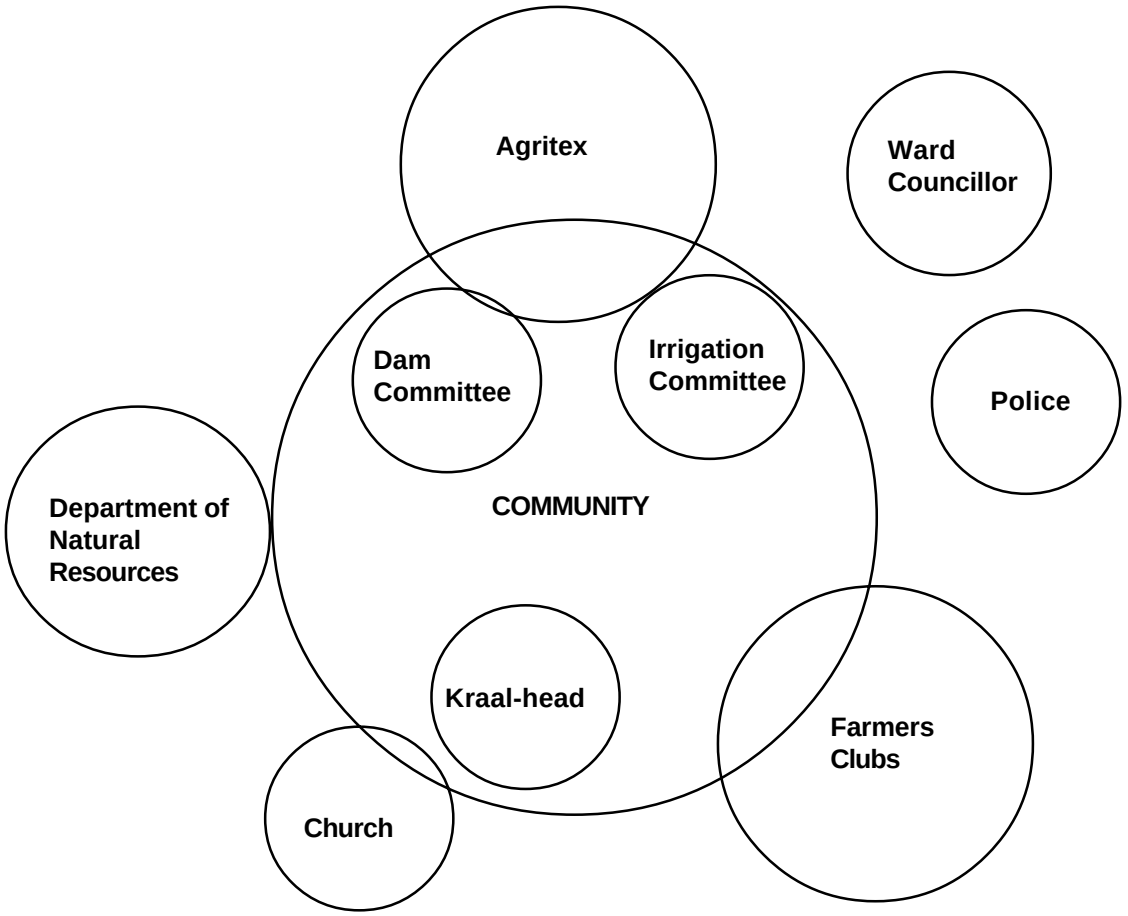
Ranking the importance of resource type in terms of use within the catchment

Resource	Cash	Food	Medicine	Construction	Soil conservation	Total	Overall rank
Trees	2	3	1	5	5	16	2
Stones	0	0	1	4	3	8	8
Grass	2	0	0	4	4	10	7
Water	5	5	0	5	0	15	3
Grazing areas	5	4	0	0	3	12	5
Arable fields	5	5	0	4	3	17	1
Soil	3	5	0	4	1	13	4
Fish	5	4	2	0	0	11	6
Reeds	2.5	0	0	2	4	7.5	9

A score of 0-5 was used to score the resources. 0 being the least important and 5 being the most important in that order

As a result the resources in the catchment were ranked in order or importance

1 Arable fields, 2 Trees, 3 Water, 4 Soil, 5 Grazing areas, 6 Fish, 7 Grass, 8 Stones and 9 Reeds.



Problem	Ranking			Comments	Proposed action
	Group 1	Group2	Agreed priority		
Gullies	3	5	6	♦ Need to fill with stones ♦ Cut off drains ♦ Vegetative barriers	♦ Groups of people should be formed to fix the gullies. ♦ CARE to supply planting material ♦ Ask owners to move further back
Streambank cultivation	6	7	5		
Homesteads on stream banks		4	4	♦ Need to approach owners to move after new areas have been allocated	♦ Move people out of the stream bank areas to old and fallow lands which are not being used
Livestock paths turning into gullies		8	8	♦ Cut off drains to be constructed	♦ Make new cattle access paths on the crests and not in the waterways
Livestock grazing on the edge of the dam		10	10	♦ Need for fencing around micro catchment	♦ This has nearly been completed
Livestock grazing in the waterways	4=	11	11	♦ Need for fencing around micro catchment	♦ This has nearly been completed
High population density	1	2	2	♦ Older people should give up some of their land ♦ Resettlement needed, especially for younger people	♦ Kraalheads to speak with RDCs ♦ Introduce family planning ♦ Give children the freedom to migrate
Lack of contours/waterways in the arable areas	4=	3	3	♦ Agritex to be asked to peg contours, but the problem is they do not come.	♦ Training of local people with A frames to be undertaken by CARE ♦ Field owners to construct contours
No toilets in some homes		6	7	♦ People to be encouraged to dig toilets	
Cutting trees		9	9	♦ New tree planting required	♦ CARE to assist in obtaining planting material
Lantana camara encroachment		13	13		♦ Work parties to be formed to cut back Lantana
Thorn trees now becoming dominant specie		12	12	♦ More grazing land is needed	♦ No action as yet
Conservation regulations not followed	2	1	1	♦ Kraalheads are corrupt and allocate land regardless of regulations. They should not accept bribes	♦ Leaders and Councilors should enforce the existing regulations ♦ Kraalheads should consult closely with the Chiefs


Section
8

SECTION 8

ESTABLISHMENT OF IRRIGATED GARDENS

OBJECTIVE

To develop low maintenance, productive and sustainable irrigated garden systems to meet food security needs and provide income-generating opportunities.

STEPS

1. Choose Location of the Garden
2. Select an Appropriate Irrigation System with the Community
3. Design the Irrigation System
4. Prepare for Irrigation Installation
5. Protect the Garden Area
6. Install the Irrigation System
7. Prepare the Garden
8. Develop Skills for Successful Garden Cultivation
9. Implement Garden Production
10. Adopt Systems for Long-term Garden Production and Management

SUMMARY OF THE PROCESS

Irrigated gardens are developed first to improve food security, and second to provide financial benefits. Linking these benefits to the on-going protection and maintenance of common property resources in the catchment area is critical for sustainability.

CARE and relevant partners help the community select the most appropriate irrigation system for long-term success. Low-cost, low-maintenance alternatives are promoted, with an emphasis on gravity-fed systems that do not require pumps. In the past, pumps have broken down at most sites, followed by the eventual failure of the entire scheme. Without a functional garden, little else is done to maintain dam and catchment resources. To this end, irrigation systems and gardens must be in place before CARE exits, to allow time to monitor and improve system performance and production. As the capacity of participants increases, new initiatives, like crop diversification to optimise nutrition, and new marketing strategies, to increase economic benefits, are developed (see Section 10). The community contributes financially to the irrigation system, and often establishes a user fee system to help pay for on-going maintenance. User fees should not exclude anyone from participating. As with dam and catchment activities, a Maintenance Task Force is established.

If a household actively participates in rehabilitation work, they are guaranteed a garden plot. People that do not participate in rehabilitation can still secure a plot, but must pay a fee. People may decide they want to join only after they see the success of the garden; in this case, the IC must decide on an appropriate policy for late joiners, drop-outs, and plot re-allocation.

DETAILED OVERVIEW

Step 1 Choose location of the garden

Step 2 Select an appropriate irrigation system with the community
- Conduct a training session on irrigation options
- Organise an exchange visit

Step 3 Design the irrigation system
- Complete additional research on site conditions and irrigation options
- Prepare the final design and cost estimate
- Establish community contributions

Step 4 Prepare for irrigation installation
- Develop the work plan for community contributions
- Procure non-available resources
- Collect and ferry locally available resources
- Hire contractors and builders

Step 5 Protect the garden area
- Build a wire fence around the garden
- Establish a live fence around the garden
- Construction of garden sheds

Step 6 Install the irrigation system
- Power sources
- Water delivery methods
- In-field water distribution systems

Step 7 Prepare the garden
- Develop a garden plan
- Allocate plots
- Prepare the land

Step 8 Develop skills for successful garden cultivation
- Assess capacities within the committees and communities
- Conduct technical training

Step 9 Implement garden production

Step 10 Adopt systems for long-term garden production and management
- Manage garden production
- Maintain irrigation systems
- User fee systems

CHOOSE LOCATION OF THE GARDEN

Potential locations are identified, remembering that the most efficient irrigation option is a gravity-fed system. The garden can be expanded from existing garden areas if they are located in an appropriate area, but usually these old sites are located too close to, and upstream of, the dam.

The Field Officer, CARE irrigation specialist, the dam engineer, Agritex, the Community Mobiliser, and committee representatives are involved in field visits to choose the most appropriate garden site. In some cases, there may be more than one option for a garden site, and the team should note the opportunities and constraints of each site to feed into the selection process for irrigation systems. The Technical Advisory Committee should also be involved in these site visits, to address issues of land use and occupancy.

This preliminary survey relates dam capacity to the potential amount of irrigation, and the potential size of the garden. A 1 ha garden requires 20,000m^3 of water per year. Where necessary and possible, a dam survey and detailed draw down analysis are done. A water audit determines the amount of water in the dam and produces a budget for water uses in the community. Soil surveys are also done for garden site selection, especially when there is more than one possible garden location. The site should have deep fertile soil, and rocky areas should be avoided. Find a site that is sheltered from strong wind and frost but has plenty of sun. North-facing plots receive sun year round.

The area under cultivation can change seasonally to maximise use of the garden throughout the year. At some dams, only a small fraction of water is actually used by the community, and most water loss is from evaporation. Therefore, when water levels are high, such as during and just after the rainy season, the community should extend the garden area. The location of the garden should try to incorporate this kind of system.

SELECT AN APPROPRIATE IRRIGATION SYSTEM WITH THE COMMUNITY

Garden users must choose the system that best suits their site and priorities. CARE and partners facilitate this participatory decision-making process by providing all of the information necessary to make an informed decision.

CONDUCT A TRAINING SESSION ON IRRIGATION OPTIONS

A training session is held to introduce the IC and garden participants to different irrigation options. The purpose is to ensure the community understands every irrigation option, its advantages and disadvantages, and to help facilitate the selection process. The content follows the "Community Resources Training Manual" —Module 6, Lesson A "Selecting an Irrigation System"— which covers the following topics:

- Irrigation options - power source
- Irrigation options - delivery and application
- Making a decision
- Analysis of options

During this session, the community identifies their priorities, constraints and opportunities in irrigation, and ranks the different options against these. Some of the factors considered in making a decision include the physical terrain, land preparation requirements, workload constraints, maintenance needs, risk of breakdown, the potential for income generation, etc. Most importantly, the cost implications and community contributions for each option are discussed. Women, who use the system the most and whose workload is the most affected, must be actively involved in selecting the irrigation system.

This training session is critical. Many communities have made poor decisions, choosing complicated and expensive systems that are no longer in use because they have broken down and nobody knows how or has the money to fix them. In many instances, people revert to using buckets to move water from the dam all the way to the garden, or are not using the garden at all anymore

ORGANISE AN EXCHANGE VISIT (OPTIONAL)

To help choose an irrigation option, the Field Officer and Agritex can organise an exchange visit to other communities where different technologies are in use. Selected members of the IC and some participants are included, ensuring that a range of people are involved (i.e., women and men, rich and poor, young and old). The community they visit is asked to demonstrate their systems. Exchange visits can be very useful in promoting gravity-fed systems or other technologies (e.g., treadle pump) that people may not be familiar with.

DESIGN THE IRRIGATION SYSTEM

Once an irrigation option is selected, technical staff prepare the full design, including layout, measurements, equipment and material needs, and cost.

COMPLETE ADDITIONAL RESEARCH ON SITE CONDITIONS AND IRRIGATION OPTIONS

More information is usually needed from the site to prepare a detailed design and cost breakdown for the irrigation system, including distances and terrain types between the dam and garden, existing structures in the area, final garden size, pipeline routing and layout of troughs in the garden, etc. Additional research may also be necessary on new irrigation technologies, if a community is having problems deciding or if there are unusual constraints at the site that need to be overcome. The irrigation specialist or contractor does a detailed site survey, with support from the Field Officer, Community Mobiliser, Agritex, and IC.

PREPARE THE FINAL DESIGN AND COST ESTIMATE

The final design is developed, including a detailed bill of quantities, contractor needs (including experienced local builders), and a total cost estimate (see Annex 8.1). CARE and Agritex peg the final garden layout.

ESTABLISH COMMUNITY CONTRIBUTIONS

Contributions should not exclude poor families; other options include delaying payment, sub–sidising fees, in-kind contributions, and garden sales to raise money for maintenance.

As with all physical works, CARE contributes non-available resources, and the community contributes and gathers locally available resources. Participants also contribute towards the actual cost of the irrigation system. This policy supports a community-management approach, and is not intended as a cost-recovery option. Financial contribution creates a sense of ownership; communities better understand that it is their equipment and they are responsible for maintenance and repairs. Having participants contribute towards costs also ensures they consider carefully amongst the various irrigation options before choosing a high-maintenance, high-cost alternative.

Generally, a community contributes 50% of the cost of necessary pipes and accessories for gravity-fed irrigation systems. In reality, the amount the community contributes varies, depending on the total cost and success of garden sales, as long as they consider costs in decision making. CARE requires that half of the contribution be collected before installation, to ensure commitment. The remainder is paid during the year after installation. Participants may agree to put a certain percentage of income earned from sales towards paying their contribution. CARE procedures for tracking community contributions are discussed in Section 2 (also see Annex 8.1). If a community chooses to install a pump system, they are responsible for 100% of pump costs.

PREPARE FOR IRRIGATION INSTALLATION

Preparations are made for installing the irrigation system while community contributions are collected and the garden site is prepared.

DEVELOP WORK PLAN FOR COMMUNITY RESPONSIBILITIES

Participants are responsible for gathering locally available resources and providing manual labour. The IC develops a work plan to identify activities, people responsible, and timelines. Garden preparation (see Step 5) should also be included in this work plan. This plan considers when materials are needed by, when equipment will be arriving on site, when contractors or builders are working in the area, when technical experts are needed, the number of people available to work and when, and other logistical issues. Work plans may have been started during project management training (see Section 5). If training has not yet begun, Module 2, Lesson C in the "Community Resources Training Manual" provides a training curriculum on work plans that can be used to train ICs.

PROCURE NON-AVAILABLE RESOURCES

Using the bill of quantities from the final design, CARE procures materials as soon as possible, to avoid delays. Bulk requests (i.e., multiple dam sites at one time) are recommended by the Administration Department for better efficiency. Appropriate procedures for material procurement (Section 2) are followed; at least 3 quotes from different suppliers are received as part of the bid analysis process.

COLLECT AND FERRY LOCALLY AVAILABLE RESOURCES

The community, as stipulated in the Social Contract, collects all locally available resources. Work plans help to co-ordinate this effort (see above). Resources must be collected as soon as possible, including sand, heavy clays, stones and large rocks, and water. Types and amounts of materials should be indicated in the final irrigation design. Using tools provided by CARE, the community transports resources to the site, again by co-ordinating work groups. If stones and large rocks must be transported from an area not immediately adjacent to the dam site, CARE has sometimes provided the necessary transport to ferry stones to the construction site. However, the provision of transport does not support a community-management approach. The community may be asked to crush stone for cement aggregate.

HIRE CONTRACTORS AND BUILDERS (AS NECESSARY)

Water delivery systems must be well built. People have been seen to revert to bucket irrigation from the dam if the water delivery system is poor. Only experienced local builders are used to construct in-field works, and contractors are needed for larger irrigation construction. Administration staff follow appropriate procedures for contracting (Section 2).

PROTECT THE GARDEN AREA

Fencing limits uncontrolled access to the garden. This protects garden crops from damage caused by livestock, and unauthorised access by non-participants.

BUILD A WIRE FENCE AROUND THE GARDEN

A wire fence is built around the garden to protect crops. The fence is constructed in the same way as micro-catchment fencing (see Section 7). Wire mesh is put against the poles on the outside of the fence and is fastened to the poles and wire using tying wire. Two lines of barbed wire are put at the top of the fence, to restrict access. Locked gates are fitted. CARE provides non-available resources, and the community provides locally available materials and ferries them to the site. Garden participants build the fence.

ESTABLISH A LIVE FENCE AROUND THE GARDEN

Live fencing is a preventative maintenance measure meant to ultimately replace the original wire and pole fence. Live fences mean fewer trees are cut for fencing materials and fence maintenance is minimised (and less expensive). Live fences also provide other uses such as fodder, fibre, food, etc. depending on the species, provide shade, and act as a windbreak. Around the garden, live fences are usually grown from hedging material or sisal. Sharp pointed sisal is planted at 0.3m intervals about 0.5m inside the wire fence. CARE provides vegetative material for live fences, but the community is responsible for planting. In cases where live fences are established later, individual or community nurseries may already be established to provide materials locally (see Section 7).

INSTALL THE IRRIGATION SYSTEM

Contractors and/or experienced local builders install the irrigation system, with supervision by CARE. Community work parties help with manual labour, but only under the direction of these experts. Construction work is done during the winter season, before the rains begin.

The different parts of an irrigation system are the power source driving the water, the method of delivering water from the dam to the garden and the in-field application method.

POWER SOURCES

The power source can be gravity-fed, or pumped, using engine, wind or solar, animal power, or hand/foot power. SDCRMP has moved from an emphasis on pumps to an emphasis on gravity-fed systems; engine and other types of pumps are no longer promoted. Rather, sites are specifically

chosen to allow gravity-fed systems to be installed. In cases where this is not possible because of physical limitations, a traditional bucket system (possibly with an in-field storage system) is promoted. If the community insists on installing a pump system, they will be responsible for all costs of the pump.

At old dam sites very few engines remain operational after CARE exits. Problems include lack of community capacity to operate and maintain the system, little involvement of women in maintenance, no linkages with suppliers of spare parts, financial problems, lack of fuel, and fear of using too much water from the dam. Treadle pumps have not met with a lot of success. When engines and pumps are no longer used, some participants revert to bucket irrigation. Most gravity-fed and bucket systems were successful.

WATER DELIVERY METHODS

Options for water delivery methods from the dam to the garden include open canals, or pipes that use an outlet pipe or siphon. Canals are more expensive, but easier maintain if there is a problem with siltation. If the proper pipe size is chosen and maintained, then siltation should not be a problem. Most communities choose to use pipes.

IN-FIELD WATER DISTRIBUTION SYSTEMS

Options for water distribution systems in the garden include open canals or troughs using bucket irrigation, taps with hose pipes, or flood irrigation. Most communities choose to have water delivered into troughs, where it is stored, and use buckets to apply water to individual plots. This is a simple system, and may be the only feasible option if a gravity-fed system is in use and water pressure is low. However, it can sometimes lead to excessive water use, requires a lot of footpaths, and involves heavy work for garden participants. Also, some plots may be further away from the troughs than others, leading to social problems. Some communities choose taps and hose pipes, which are more expensive. Other alternatives for in-field designs can still be developed.

Small-scale drip irrigation kits (drum with hose pipes that slowly deliver water to plots) have been tested. Farmers were concerned that it would be stolen or easily damaged. Some farmers indicated they would pay for the system.

If the irrigation system is not completed by the time CARE exits the site, it is usually never finished. Enough time should be left to help the community with initial operation and maintenance and demonstrate the benefits of increased garden production.

Step 7

PREPARE THE GARDEN

The IC and garden participants plan a garden layout suitable to the land and nearby resources. Pegging a standard plot layout sometimes leads to the removal of useful trees and shrubs, or to a layout that causes erosion.

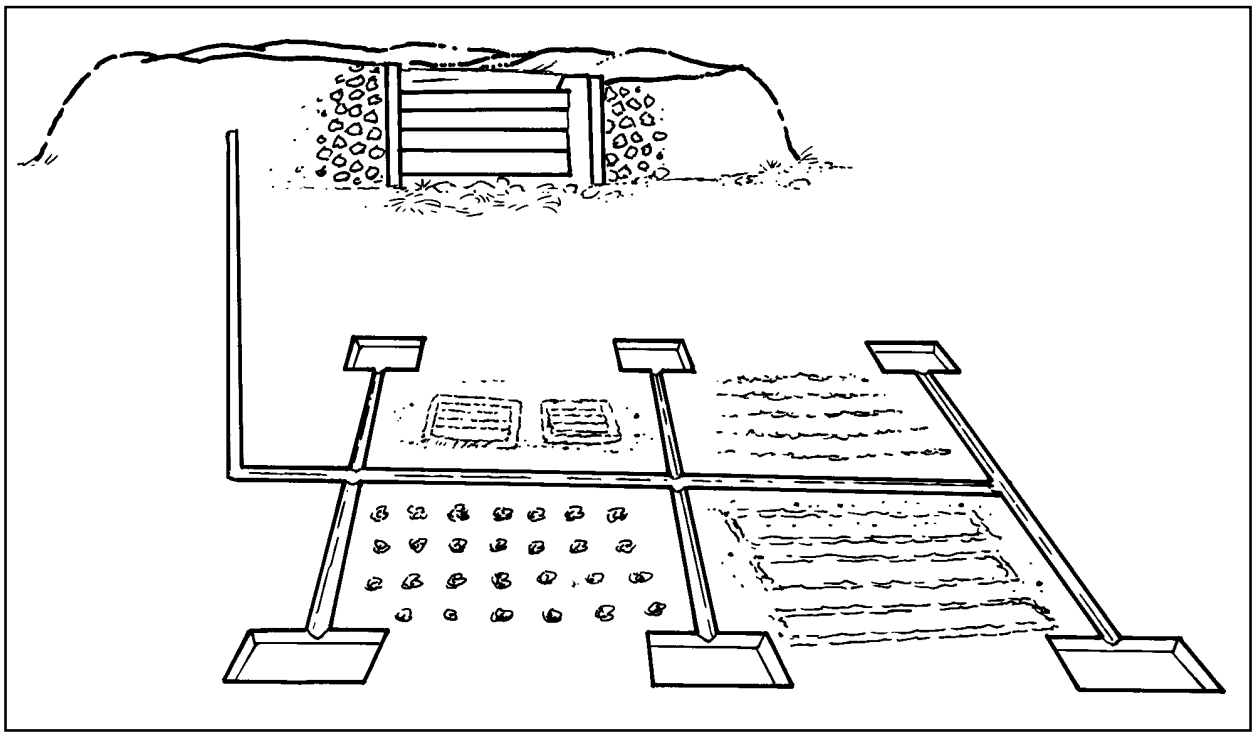
DEVELOP A GARDEN PLAN

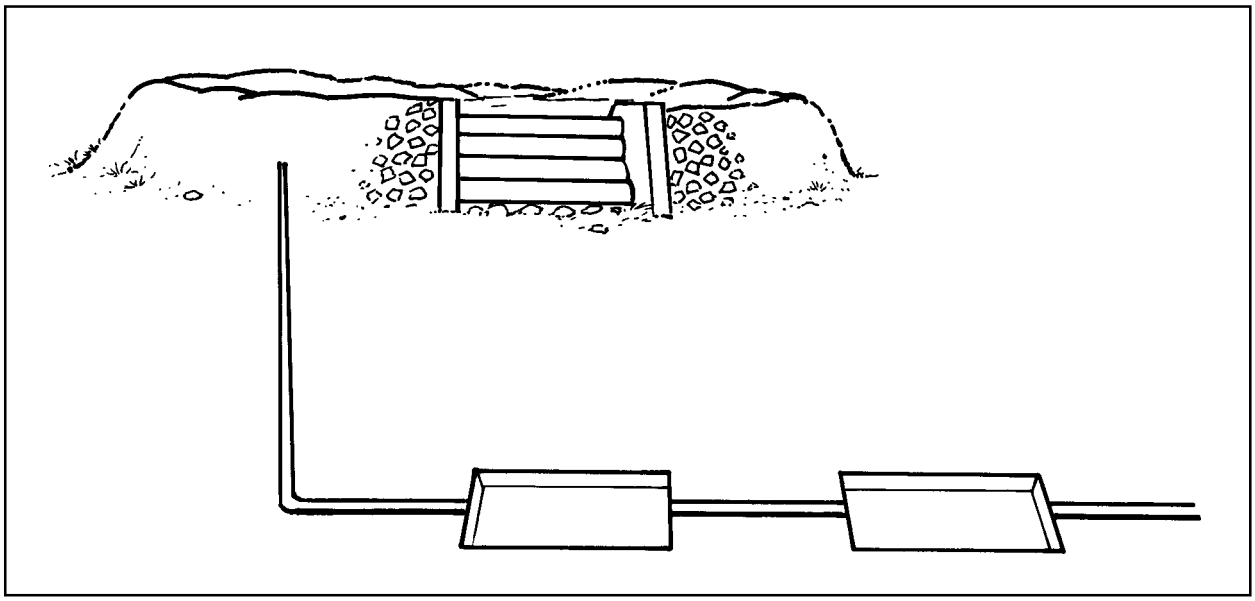
The Field Officer and CARE agronomy specialist work with Agritex and participants to plan garden activities, as is done with the Participatory Catchment Plan prior to beginning catchment protection activities. A training session is held to help the IC and garden participants develop a garden plan. The content follows the "Community Resources Training Manual" —Module 6, Lesson C "Garden Planning"— which covers the following topics:

- Garden area assessment
- Garden planning and layout

The IC, Community Mobiliser and garden members first map the resources available in and around the garden site (e.g., amount of water, soil type, slope). Using this resource map, they plan where to place the different parts of the garden before preparing the land. The aim is to design the garden layout while building on the strengths and weaknesses of the site; for example, keeping existing fruit trees and soil improvement plants, or minimising paths around erosion-prone soils.

Standard beds are 2.5m long by 120cm wide, with 50cm-wide paths in between, but rectangular beds may not be the best for saving space or for soil and water conservation. Energy-efficient bed shapes should be included in the plan. Usually beds run in a strip from the water point to ensure equal access to water for all households.





ALLOCATE PLOTS

Once the layout is designed, the IC, CARE and Agritex allocate the garden plots. Any household participating in dam and catchment rehabilitation activities, and paying any necessary fees, is eligible for plots in the irrigated garden. Households that do not help with rehabilitation can still secure a plot, but must pay a fee determined by the IC (usually based on the number of days that people have worked). However, the more participants there are, the less land will be available for each. People are usually allocated the same number of plots, with equal access to the water source. The IC records a list of participating households and the number of plots for each.

Irrigated gardens should not be considered "closed systems", as this could lead to problems. Rules related to late joiners, plot re-allocation and inheritance should be included in the Constitution so movement in and out of the scheme can be accommodated.

PREPARE THE LAND

The IC organises work parties to clear the area of stones, anthills, and unwanted vegetation. A lot of trees are often felled and stumped for a new garden site, but not all vegetation needs to be removed. Useful plants that can benefit the garden as windbreaks, or by improving the soil, should be left. Tall trees on the north side may need to be pruned or removed to allow sun. Cleared plants should be used to make compost.

If the site is sloping, physical structures such as swales or terraces should be built to stop erosion. Soil-improving trees and shrubs and bunch grasses such as vetiver can be planted on the swale banks or terrace walls. Paths moving down the slope should be avoided as they could turn into gullies. If sloping paths are unavoidable, small swales can be made across the path to re-direct water, or paths can be planted with grass. Pits can be dug to sink water in areas where it collects (e.g., off roads, paths, rocks and swales). A number of methods can be used during garden preparation to improve soil quality, including double digging, fertility trenches, pit beds, and sheet mulching.

DEVELOP SKILLS FOR SUCCESSFUL GARDEN CULTIVATION

Once the irrigated garden is operational, the community requires technical training in different garden cultivation methods.

ASSESS CAPACITIES WITHIN THE COMMITTEES AND COMMUNITY

The Field Officer and relevant extension workers determine what skills the community already has, before they begin the technical training programme. A training needs assessment helps specify training content, extension methods, timing of lessons, amount of training, and necessary follow-up that is most appropriate for the audience. The Field Officer does a participatory needs analysis using different methods to gather information. During this assessment, farmers with significant knowledge may be identified for farmer-to-farmer training.

CONDUCT TECHNICAL TRAINING

The Field Officer works with the IC chairperson(s) and the Community Mobiliser(s) to schedule times for the training sessions. The Field Officer informs other partners of the training well ahead of schedule. Training is done first on interventions that are of highest priority for the garden. Different methods for technical training are detailed in the "Community Resources Training Manual" —Module 5 "Technical Extension"— including:

- Farmer-to-farmer training
- On-the-job training
- Demonstrations
- Trials / farmer experimentation
- Exchange visits

The purpose of this module is to provide general guidance on different extension methods for technical training. The details of garden production methods are provided in other reference materials.

Technical training continues throughout implementation. Field Officers provide training in close collaboration with extension workers from Agritex and other partners.

Technical training often benefits only men, who have more regular contact with extension workers. Targeted training for women can help overcome participation barriers, improve skills, and achieve greater impact on garden production.

IMPLEMENT GARDEN PRODUCTION

This guidelines document describes some methods for garden production; other options are available. The aim is to incorporate traditional knowledge and vegetables into activities, and promote both standard and alternative (i.e., environmental) garden production. Garden participants and the Field Officer seek technical assistance from Agritex and other partners.

Crops and planting systems: The same vegetables are often grown all the time. Crop diversification should be encouraged to meet demand and spread risk. If mono-cropping is used, beds should have a different crop planted on them for each rotation. Inter-cropping helps improve plant health and protect them from pests and disease. Extension covers on-going crop management such as weeding, thinning, harvesting, handling, and storage.

Soil and water conservation: Incorporating water conservation measures into the irrigated gardens allows more area to be irrigated, conserves water during dry years, and reduces labour requirements (as less watering is required). Similar soil and water conservation methods used in the catchment area and on arable lands can be used in gardens.

Soil fertility and improvement: Soil can be damaged and infertile. If this is the case, soil condition needs to be improved over the long term using methods that repair compaction, aerate the soil, and add organic matter to it. Short-term methods for new garden land include double digging, fertility trenches, pit beds, and sheet mulching. Long-term methods include using soil improving plants and livestock, reducing chemical use, and reducing ploughing.

Vegetables need a lot of nutrients in order to grow well. Organic methods of improving soil fertility include composting, manure, mulching, and soil improving plants. Chemical fertilisers are also used in irrigated gardens.

Pest and disease control: Pests and diseases can destroy irrigated crops if not controlled. The type of controls used depends on the layout of the garden, intensity of production, and goals of the group. A garden that is producing and marketing co-operatively and on a large scale often has a mono-cropping layout pattern and requires chemical pest control. Otherwise, a pest can wipe out the whole crop at once. Alternative methods of pest and disease control support more sustainable and affordable production, but work best when inter-cropping patterns are used and production is less intensive.

Nurseries and propagation: Some vegetables can be sown directly in the garden, but some seeds and seedlings require a nursery or seed bed. Nurseries are established in irrigated gardens to ensure a local supply of vegetables.

ADOPT SYSTEMS FOR LONG-TERM GARDEN PRODUCTION AND MANAGEMENT

Activities often focus on the design and installation of the irrigation system and garden set-up. But without community-based systems in place that support on-going management of this infrastructure, garden production will not be sustainable.

MANAGE GARDEN PRODUCTION

The IC is responsible for working with extension workers and participants to plan and manage production on an on-going basis. Tasks can include developing planting and harvesting schedules (cropping calendars), organising input purchases, keeping production and sales records, re-allocating plots, etc. Irrigated gardens are managed both co-operatively and independently, depending on the goals of the participants. A fully co-operative garden buys inputs together, harvests together, and sells together.

The IC can plan production levels depending on water levels in the dam. The area under cultivation should increase when the dam is full, to maximise use of the garden throughout the year. Otherwise, water is just being lost from the dam due to evaporation. Similarly, the IC should encourage year-round production in the garden, even if maize is the only crop grown during the rainy season. Peak garden production is typically during the dry season, and gardens are often not used during the rainy season. However, because the garden has a guaranteed source of water, when maize or other crops are planted in the rainy season, household food security improves. The constraint to garden cultivation during the rainy season seems to be a lack of labour as people work in their fields. The IC could try to identify labour saving arrangements to address this constraint.

MAINTAIN IRRIGATION SYSTEMS

A training session is held with garden participants to ensure maintenance and management responsibilities are clear, and to provide skills required for maintenance activities. The content follows the “Community Resources Training Manual” —Module 6, Lesson B “Maintenance”— which covers the following topics:

- Role of the Irrigation Committee
- Maintenance needs and systems

The life of the irrigation system depends on the amount of attention or maintenance given to it by users. Because of the high costs of installation, it makes more economic sense to ensure that regular and thorough maintenance is done. The IC and garden participants may choose to establish a Maintenance Task Force. This task force assumes the following responsibilities:

- Develop a maintenance schedule
- Regularly inspect irrigation works for problems

- Report any problems to the Irrigation Committee
- Clean or do other upkeep of irrigation works annually
- Organise and do repairs when necessary
- Keep records of inspection and maintenance

Women are less likely to leave the scheme and more likely to recognise the time-saving advantages of a functioning irrigation system, so they should be involved in maintenance. They must be trained in operation and management of the system.

Sometimes, maintenance agreements and contracts are developed to link communities with the private sector, to provide a source for spare parts, maintenance and training.

USER FEE SYSTEMS

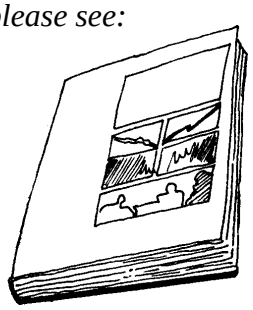
Many garden groups decide to have a user fee system, a regular payment made by participants for use of their irrigated plots. Sometimes, this fee is used to raise funds for the community's contribution to the irrigation system. After contributions are raised, the user fee continues to be collected to raise money for on-going maintenance, support to marketing activities, or expansion of other income-generating activities. User fees help with financial sustainability.

Some garden groups decide to pay for maintenance and repairs as needed, instead of collecting money that does not have a specific purpose. However, if the cost of maintenance or repair is very high, some participants may not have enough money at that time to pay their share. If enough money can not be raised, the repair can not go ahead.

The Field Officer advises the IC on how to manage the user-fee system, especially how to ensure fees do not exclude vulnerable households from participation. A bank account is opened. Training in record keeping for IC members (especially treasurers) is critical when money is being collected from participants (see the "Community Resources Training Manual" —Module 2, Lesson D "Record Keeping").

For further information related to garden production and management, please see:

- *CARE Zimbabwe. Vegetable Production in Irrigated Gardens*
- *Elwell and Maas. Natural Pest and Disease Control*
- *Moran. Success in Vegetable and Fruit Production*
- *Windmill. Vegetable Planning Guide*
- *ZFU/Agritex. Introduction to Good Land Husbandry (technical reference booklets)*



Section 8 Annex

Annex 8.1 Example – Final irrigation design

BILL OF QUANTITIES - CHOMKOMWE
(90mm PeHD siphon into PVC pipe)
24-Sep-00

	PURCHASE REQUEST			DELIVERED TO FIELD			
		Unit Price	Total Price		Delivery	Total	
Item	Qty.	est. (Z$)	est. (Z$)	Date	Note	Price (Z$)	
SIPHON							
Strainer m/m	1	550	550				
80 mm Non return valve	1	1800	1800	14/10/00	2425	?	?
90 mm - 3 " Poly to steel adapter	2	600	1200	14/10/00	2425	883.1	Tender 5
90 mm PeHD pipe Cl. 10 (m)	50	105.25	5262.5	14/10/00	2425	7507.5	Tender 7or8
80 mm GI Socket	2	397.5	795	14/10/00	2425	?	?
80 mm Brass gate valve	1	1146.375	1146.375	14/10/00	2425	1716.05	Tender 7or8
80 mm GI Nipple	1	181.149	181.149	14/10/00	2425	198	Tender 5
80 mm S/O Flange	2	410.1	820.2				
Gasket, bolts nuts for 80 mm S/O flange	1	200	200				
90 mm VMP	2	50	100	14/10/00	2425	100.74	Tender 5
90 mm VSP	2	50	100	14/10/00	2425	164.46	Tender 5
MAIN LINE							
90 mm PVC piping Class 4 (m)	220	65	14300	14/10/00	2425	16361.4	Tender 5
						6269.4	Tender 5
65 mm GI piping x 0.5 m m/m	5	460	2300	14/10/00	2425	783.675	Tender 5
65 mm GI piping x 0.4 m m/m	5	368	1840	14/10/00	2425	626.94	Tender 5
65 mm GI piping x 0.3 m m/m	5	276	1380	14/10/00	2425	470.205	Tender 5
65 mm Brass gate valve	5	1146.375	5731.875	14/10/00	2425	6729.95	Tender 7or8
RBP 90-75mm Reducer	5	132.49	662.45				
65 mm GI elbow	10	98.5	985	14/10/00	2425	3284.5	Tender 7or8
90 mm ETP	4	142.87	571.48				
90 mm GIV elbow	1	157.85	157.85	14/10/00	2425	157.85	?
90mm 22.5 Deg. Bends	2	130	260				
Solvent cement (500ml)	2	65.72	131.44	14/10/00	2425	430.8	Tender 5
Plumbers delight (250 ml)	2	140.63	281.26	14/10/00	2425	249.56	Tender 5
Thread tape (rolls)	12	12	144				
Sand paper (sheets)	20	20	400				
TOTAL			**41300.58**			**45934.13**	

DAM SITE: **CHOMKOMWE**
Type of Irrigation System: Gravity Fed

SECTION 1: ESTIMATE COSTS AND PLANNED CONTRIBUTIONS

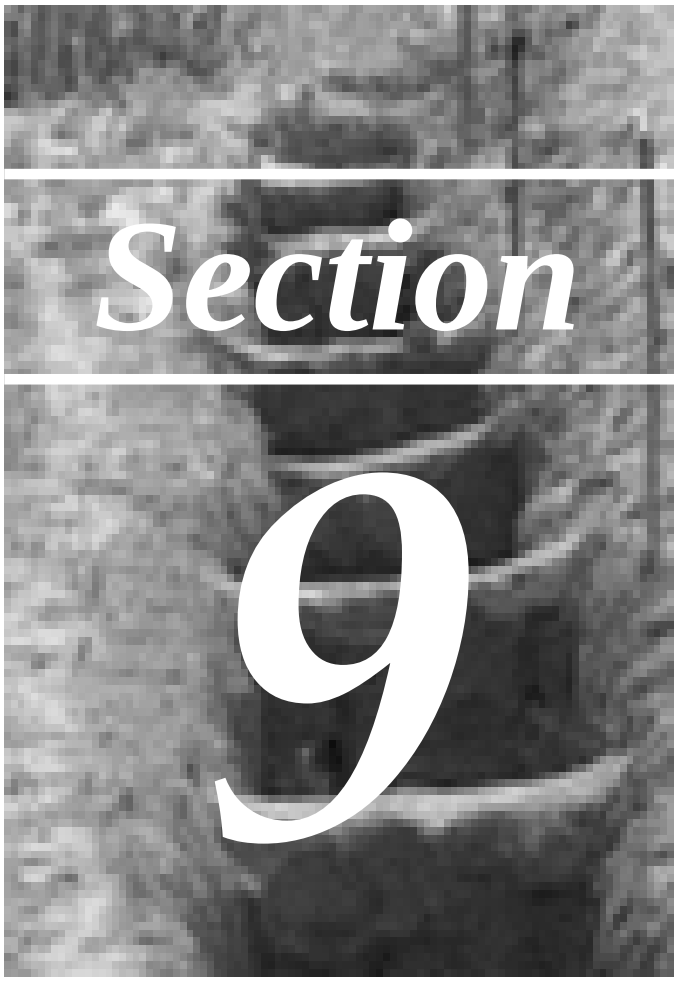
Engine and Pumps:	0
Piping and Fittings:	41300
Accessories	0
Total Cost Estimate:	41300
Total community contribution:	20650
Initial contribution (50 %):	10325
Additional monthly contribution:	860

SECTION 2: ACTUAL COST AND CONTRIBUTIONS

Engine and Pumps:	0
Piping and Fittings:	45930.00
Accessories	0
Total Actual Cost:	45930.00
Adjusted Total Contribution:	22965
Initial Contribution (50 %):	11482.50
Adjusted monthly contribution:	956.88
Date of installation completed:	
Monthly contributions to begin:	20/10/2000
# participating households:	160

RECORD OF CONTRIBUTIONS	Value/ amount (Z$)	Date	CARE receipt ref.	Cheque ref	Planned Outstanding Balance By End Of Month (Z$)	(%)
Initial Contribution	14000	18/10/2000	10955/6666	117427	10325	50%
Monthly Contributions						
Month 1:	0				9465	41%
Month 2:	0				8604	37%
Month 3:					7744	34%
Month 4:					6883	30%
Month 5:					6023	26%
Month 6:					5163	22%
Month 7:					4302	19%
Month 8:					3442	15%
Month 9:					2581	11%
Month 10:					1721	7%
Month 11:					860	4%
Month 12:					0	0%
……						

PAID TO PRESENT:	**14,000.00**	**61%OF TOTAL CONTRIBUTION PAID**
BALANCE OF INITIAL CONTRIB.:	**-2,518**	**-24%OF INITIAL CONTRIBUTION PAID**
DATE	**18/10/2000**	


Section
9

SECTION 9

IMPROVEMENT OF DRYLAND AGRICULTURAL PRACTICES

OBJECTIVE

To improve agricultural productivity and at the same time reduce erosion and dam siltation through the implementation of better agricultural practices in arable areas around the dam.

STEPS

1. Develop the Agronomy Work Plan
2. Develop or Revise Memorandum of Understanding with Partners
3. Identify Lead Farmers
4. Develop Technical Skills in Agronomy
5. Implement Technologies for Improving Dryland Production
6. Encourage Adoption

SUMMARY OF THE PROCESS

Poor agricultural practices, such as a lack of in-field soil and water conservation, bad tillage practices, inappropriate use of implements, etc., contribute towards erosion and land degradation in catchment areas, and also contribute to poor production. CARE works with farmers to identify and promote adoption of appropriate dryland farming and water conservation harvesting techniques, especially for arable areas in the catchment. At the same time, working with farmers provides an opportunity to improve dryland production by also promoting the use of different crop varieties, new implements, crop establishment methods, soil fertility methods, and more. CARE and extension workers partner with research institutions and other NGOs to expose farmers to new ideas. Partnerships provide agri-input suppliers and researchers with information on the field performance of their products. The extension methods used are designed to support a community and participatory management approach through the use of farmer-to-farmer training and exchange visits, and a focus on “learning by doing”. Farmer capabilities in innovation, experimentation and extension are strengthened. Not all agronomy interventions are done at all sites. Sites for trials and demonstrations are chosen based on the priorities of the local community, the needs of the area, the area of operation of research partners, etc. The aim is to have a variety of different interventions in a region, with community and farmer exchange visits used to share information and promote adoption.

As technologies are tested, demonstrated and evaluated by farmers, adoption throughout the community is facilitated. Adoption is most likely when technologies (including conservation works) improve yields and provide direct benefits to the farmer. Ultimately, agronomic interventions are chosen to provide farmers with a range of options to help them contribute to catchment protection, reduce the risk of drought, and improve food security.

DETAILED OVERVIEW

Step 1 Develop the agronomy work plan
Ensure community management structure in place
Identify priorities for arable lands and assess farmer capacities
Develop work plan with Conservation/Agronomy Committee
Select dam sites

Step 2 Develop or revise Memorandum of Understanding with partners

Step 3 Identify lead farmers

Step 4 Develop technical skills in agronomy

Step 5 Implement technologies for improving dryland production
Soil and water conservation measures
Improved agronomy measures

Step 6 Encourage adoption

DEVELOP THE AGRONOMY WORK PLAN

Agronomy interventions are planned and managed by the Conservation/ Agronomy Committee or a special task force. Farmer priorities are used to develop the work plan of activities, linking to activities in the Participatory Catchment Plan. The emphasis is on increasing production in dryland areas and at the same time promoting soil and water conservation methods in arable areas.

ENSURE COMMUNITY MANAGEMENT STRUCTURE IN PLACE

Usually the same community management structure established for catchment protection activities (Conservation Committee or Task Force) is also used to implement agronomy activities (see Section 7). Alternatively, a separate Agronomy Committee is established, sometimes as a Task Force of the Conservation Committee (tasked to address specific issues on arable lands). If a new community management structure is established, the Field Officer facilitates appropriate training and selection processes (see Section 4).

IDENTIFY PRIORITIES FOR ARABLE LANDS AND ASSESS FARMER CAPACITIES

Before starting agronomy interventions, environmental awareness training and the Participatory Catchment Plan (PCP) process have already been completed in the community, setting the stage for a more detailed assessment of problems in arable areas. Most of the problems and solutions related to land degradation are covered in the Participatory Catchment Plan (PCP) (see Section 7). Conservation works used in catchment areas are also promoted on arable lands, along with in-field soil and water conservation methods. However, other dryland production problems may not have been fully analysed during this process, and working with farmers on soil and water conservation provides an opportunity to also improve production. The Field Officer and CARE agronomy specialist, working with the Conservation/Agronomy Committee and Agritex, conduct a needs assessment using the “Community Resources Training Manual” —Module 5, Lesson A “Needs and Services”-- which covers the following topics:

- Problems, solutions and constraints
- Extension services

Lesson A introduces the need for technical training by reviewing the problems and solutions faced by farmers in arable areas. The purpose of this exercise is to go beyond conservation works into possible needs related to better soil fertility, new crop varieties, improved implement and draught power use, etc. Farmers may not be familiar with some of the technologies that can solve certain problems, and they will need training in these areas. Thus, this exercise also serves as a training needs assessment. During this assessment, the Field Officer may identify people with significant knowledge about soil and water conservation, who may be appropriate lead farmers (see Step 3).

DEVELOP WORK PLAN WITH CONSERVATION/AGRONOMY COMMITTEE

Once the problems on arable lands and the capacities of farmers are understood, the Conservation/Agronomy Committee develops a work plan specific to the activities for arable lands. Like other work plans, it should identify activities, responsible people, resources required, and timelines. CARE and Agritex contribute to the work plan by ensuring it links to other activities in the community, and other extension activities in the region. This work plan is an extension of the PCP.

In developing the work plan, the Field Officer and Agritex ensures the highest priority problems are being addressed, and technologies that demonstrate both short and long-term benefits are promoted. Adoption of new technologies will depend on the priority of the problem being addressed. A technology with short-term benefits that targets a high priority problem will have the highest adoption rate. A technology with long-term benefits will have some adoption. The lowest rates of adoption will be for technologies with long-term benefits that target low priority problems.

SELECT DAM SITES

Not all agronomy interventions can be done at all sites, as this would take too much time and resources. Lead dam sites are selected for different interventions based on the main problems in catchment arable areas and the priorities of farmers. The Field Officer, CARE agronomy specialist, and Programme Manager sort out the logistics of the agronomy programme annually, taking into consideration human and financial resource constraints. The involvement of partners depends on their area of operations. The aim is to have a variety of agronomy technologies being demonstrated in a variety of communities, with exchange visits and field days used to share information amongst communities within a district. Ideally, the focus in each community is on their top priority problems, and communities with similar problems can visit these sites.

DEVELOP OR REVISE MEMORANDUM OF UNDERSTANDING WITH PARTNERS

CARE uses Memorandum of Understanding (MOU) to formalise the roles and responsibilities of its partners, including research partners that work with Conservation/Agronomy Committees.

From the agronomy work plan, CARE and the community identify possible partners that could work with the Conservation/Agronomy Committee. Meetings are arranged to begin developing relationships. In order to create solid working relationships once implementation has begun, it helps to establish formal working arrangements with each partner organisation through a detailed Memorandum of Understanding (MOU). MOUs try to foster commitment, and spell out roles and responsibilities of each partner. For partnerships with research organisations seeking to work at CARE sites, it is important that the responsibilities of CARE staff be clearly stated, as research linkages can sometimes require a high level of effort.

See Section 2 for a discussion on the drafting of MOUs. Each partner keeps a copy of the final signed MOU.

The partnerships that CARE forms are based on the programme objectives, community needs (see previous step), and relevancy of partner activities. Previous research partners have included agri-business industries (e.g., Pioneer Seeds, SeedCo, Cargill, Windmill, Zimbabwe Fertiliser Co., etc.) and research institutions (Silsoe Research Institute, University of Zimbabwe, CIMMYT, ICRISAT, ICRAF, HR Wallingford, etc.). Partnerships enhance the communities' linkages with private sector and research institutions, allowing farmers to access new technologies they otherwise would not be aware of. Partnerships also allow researchers and marketers to reach their target audience, and help CARE achieve its objectives.

CARE's role in partnerships with research institutions usually involves facilitating site and farmer selection, distributing seeds and other materials, assisting with implementation and monitoring, and participating in workshops and evaluations. Sometimes the partner contributes to travel and other costs.

Each partnership adds another task to Field Officer work schedules. Partnerships should always add value to the programme objectives and clear benefits to communities. Be careful not to enter into too many, or useless, agreements.

Step 3

IDENTIFY LEAD FARMERS

Not all agronomy interventions can be done at all sites and with all farmers, as this would take too much time and resources. Therefore, extension methods rely on farmer testing and demonstrations and lead farmers to disseminate information and promote adoption of new practices.

Lead farmers are selected at each dam site to demonstrate or experiment with new technologies. The Field Officer works with the Conservation/Agronomy Committee and Agritex (or other extension workers, as appropriate) to identify innovative farmers in the community. These farmers should have shown initiative in trying new dryland agriculture methods on their fields. Their fields should be conveniently located, usually in the catchment area. The Field Officer, committee and extension worker(s) visit this site and determine if the farmer is willing to participate. The farmer eventually serves as a farmer trainer, extending his/her new knowledge to other farmers in the surrounding community.

Lead farmers should be selected because they are innovative, respected by the community, and are willing to test new ideas. They are the primary target for agronomy training, and are expected to pass on their knowledge. Additional training in farmer-to-farmer extension methods can encourage leadership.

DEVELOP TECHNICAL SKILLS IN AGRONOMY

A variety of methods are used in technical extension for agronomy. The main method of extension uses the principle of "kuturaya" —"lets try"— a process of trial and error, learning and improving, where extension is often led by farmers themselves. The main target for agronomy traning by CARE and partners are the lead farmers.

The Field Officer works with the committee chairperson(s) and the Community Mobiliser(s) to schedule a time for the training sessions. The Field Officer informs other partners involved in the training well ahead of schedule. Different options for technical training are detailed in the "Community Resources Training Manual" —Module 5 "Technical Extension"— including:

- Farmer-to-farmer training
- On-the-job training
- Demonstrations
- Trials / farmer experimentation
- Exchange visits

The purpose of this module is to provide general guidance on different extension methods for technical training. The details of how to construct soil and water conservation measures, implement experimental plots, etc. are available in other reference materials (see Step 5).

Ultimately, the use of different extension methods at different times and with useful follow-up should increase adoption and replication of technologies or products that are appropriate for the farmers and the problems they face. The type of extension method depends to some extent on the technology being promoted. Farmer experimental plots are often used to test and promote new crop varieties or compare different field preparation methods. Demonstrations are often used to explain how to use new implements or draft animal power methods. Exchange visits are used when a community wants to observe a different technology not used in their area. All of these extension activities involve lead farmers.

Technical training in new agronomy technologies will continue throughout implementation. Field Officers provide technical training in close collaboration with extension workers from Agritex, Department of Natural Resources, Forestry Commission, as well as research institutions and NGOs.

Step 5

IMPLEMENT TECHNOLOGIES FOR IMPROVING DRYLAND PRODUCTION

This guidelines document reviews different technologies to improve sustainable dryland production; many other methods are possible. The community and Field Officer seek technical assistance from extension workers and research/NGO partners. Various information resources are available (see reference list).

Before implementing agronomy interventions, the location of any structures and plantings is pegged (with necessary technical assistance) and locally available resources are gathered and ferried to the site(s) by the community. To support a community-management approach, technologies focus on those that use locally available materials. Any non-available resources are procured and transported to the site by CARE and partners. The CARE agronomy specialist and research partner work together on any experimental design.

SOIL AND WATER CONSERVATION MEASURES

All of the physical and vegetative protection measures discussed in Section 7 can be applied to arable areas. Conventional tillage methods are often unsuitable, and result in lower yields. New methods are demonstrated that can help increase crop yields, while conserving water and soil. Soil and water conservation in between contours that have been promoted in the past include tie ridges, mid-season ridges, mulch tillage, minimum or no tillage, strip cropping, winter ploughing, inter-cropping, clean ripping, pot holing, rough ploughing, and stover retention.

Farmers often find some soil and water conservation structures and tillage methods to be too labour intensive, especially if they lack draft animal power. Farmers can choose to use these methods on only a portion of their fields, for food security purposes.

IMPROVED AGRONOMY MEASURES

Soil and water conservation in arable areas should be combined with practices to increase production, such as fertility management, seed priming, planting methods, etc. Farmers are more likely to adopt conservation measures that also increase yield.

New crop varieties: Many farmers purchase the wrong crop varieties, and extension workers may not know about all of the varieties available —new varieties are continuously being developed, especially for drought-prone areas. Sometimes farmers are hesitant to experiment with new crops, even if they are more suitable to their region than maize. The type of crop varieties tested depends on the activities of researchers in the area, as well as farmer needs. In the past, crop trials have been done for maize, sunflower, ground nuts, sorghum, millet, vegetable seed, bana grass, leucena trees, and others.

If crop varieties and new implements are being promoted, they should be made available locally. Business agents and the local informal sector can be developed as a local source of inputs, equipment, spare parts, and maintenance services.

Implements: The poor condition of draught animal power implements is often compounded by the lack of farmer training in the proper use and maintenance of these implements. Dissemination of knowledge has been limited in this regard, and Agritex has been relied on as the main source of information. Demonstrations are used to look at the use, repair and maintenance of existing implements (including to avoid erosion), and new implements and innovative techniques. Some of the implements demonstrated in the past have included the lightweight plough, lightweight cultivator, ripper tyne, CONTIL toolbar and attachments, and tie makers.

Many implements are too heavy for women, who do much of the farm labour. Lightweight implements should be promoted as HIV/AIDS, urban migration, etc. make female-headed households more common.

Crop establishment: Better crop establishment methods can improve production. Methods that have been tested and promoted in the past have included maize seed priming, seed soaking, seed multiplication methods, rip and plant methods, and open ploughing methods.

Soil fertility: One of the biggest constraints that communal farmers face is poor soil quality, compounded by a lack of resources to purchase fertiliser or provide livestock manure. Methods to improve soil fertility include crop rotation, inter-cropping (also useful for pest management and erosion control), green manuring, composting, stover retention, and proper use of livestock manure, anthill soil, and leaf litter.

Agro-forestry: The inter-cropping of crops and trees in the same field is another method of improving soil fertility, reducing erosion, and conserving water. Trees can be planted along contour ridges, in alleys (parallel to the contour of the field), scattered in the field, and in community gardens. Special agro-forestry initiatives have included improving fallow land (using *Sesbania*) and fodder banks.

Step 6

ENCOURAGE ADOPTION

Farmers are more likely to learn from other farmers and from trying new techniques for themselves. Monitoring and evaluating the successes and weaknesses of new technologies will help farmers share this information with each other.

Monitoring allows farmers to observe change over time due to the interventions. Evaluation helps farmers select the options that performed the best, and are most suitable to local conditions. Different methods are used in monitoring and evaluation, and to encourage adoption:

Field days: Held with lead farmers and other farmers to observe and monitor change in the field. Holding field days at key stages in the season when the effects of the new technology are most apparent will encourage them.
Record keeping: Kept by lead farmers to record changes and results.
Farmer workshops: Special sessions held with the community to evaluate new technologies, select those that perform the best and are most suitable to their local conditions, and encourage replication.
Stakeholder workshops: Special sessions (often annual) amongst partners, and including community representatives, to evaluate agronomy approaches, share information, and revise the programme.

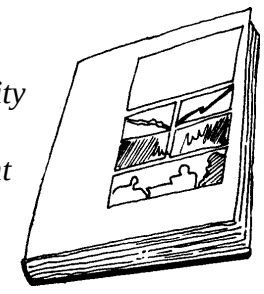
Research partners have specific record keeping requirements. CARE helps in the design of these records, providing advice on the type of information that farmers are most likely to keep. Partners sometimes assume that forms can be distributed and farmers will complete them, but it takes considerable effort by field workers to ensure complete records are provided.

Farmer evaluations are based on their own criteria for success or failure. Criteria are established through brainstorming and discussion and usually include both quantitative and qualitative indicators. Different treatments, varieties, etc. are ranked against these criteria, and compared to existing practices. Sometimes research partners need to do their own evaluations, in which case their criteria should be combined with the farmers' criteria. End-of -season evaluations by CARE and committees help identify piorities for the next agricultural season. Lead farmers encourage other farmers within their network to adopt successful new technologies.

Field Officers, the CARE agronomy specialist, and research partners have used different techniques for farmer evaluation. Pair-wise ranking exercises were done to compare different soil and water conservation techniques (see Annex 9.1). Ranking exercises using farmer criteria were done to evaluate different crop varieties (see Annex 9.2).

For further information related to dryland agriculture, please see:

- *Ministry of Public Service, Labour and Social Welfare. Community Action Programme - Natural Resources Management Handbook*
- *Swedish Co-operative Centre. Self Study Material for Drought Mitigation in Rural Zimbabwe*
- *ZFU/Agritex. Introduction to Good Land Husbandry (technical reference booklets)*



Section 9 Annex

Annex 9.1 Example – Pair-wise ranking exercise

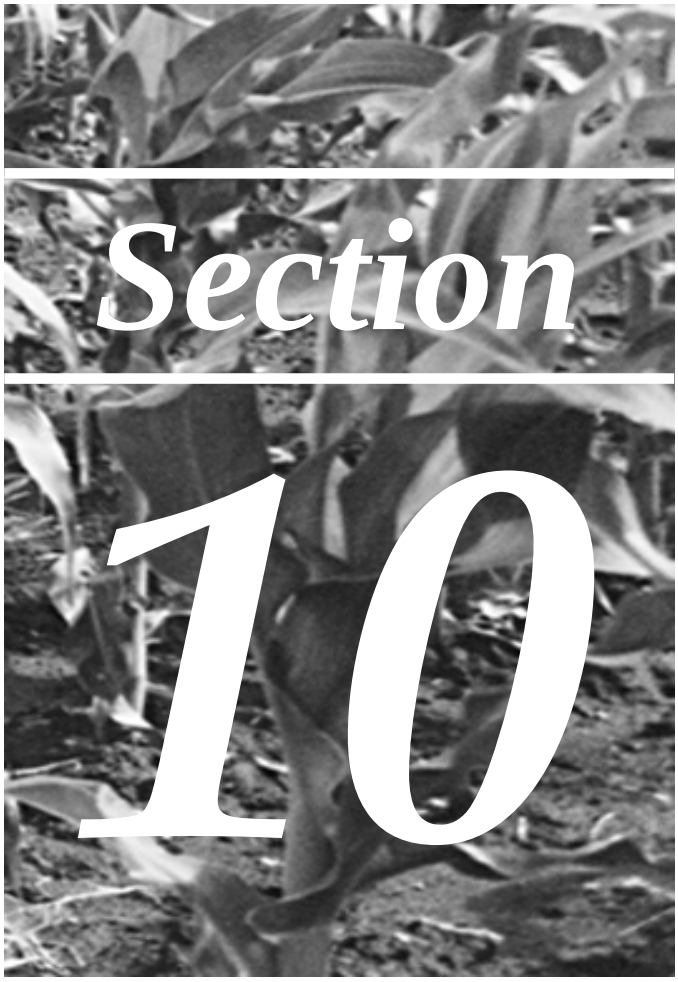
Ranking of problems in the catchment using pair-wise ranking

Problem	B	C	D	E	F	G	H	Score	**Priority**
A. Gullies	A	A	A	A	A	A	A	7	**1**
B. Stream bank cultivation		B	B	E	F	B	B	4	**3=**
C. Arable lands too close to waterways			C	C	F	C	C	4	**3=**
D. Cropping without contours				D	F	D	D	3	**5=**
E. Tree cutting					F	E	E	3	**5=**
F. Over-grazing too close to the dam						F	F	6	**2**
G. Erosion caused by cattle tracks							H	0	**8**
H. Brick making								1	**7**

Annex 9.2 Example – Farmer ranking exercise

Farmer ranking of treatments against their criteria

Criteria	Harrow-and-hoe plant	Rip-and-plant	Hoe-plant
Ease of operation after an average rainy season	2	3	2
Ability to conserve moisture	2	3	1
Suitability for different soil types (clay/sand)	2/2	3/1	1/3
Weed growth after planting	-3	-1	2
Draught power requirements	-1	-3	2
Timeliness of operations	1	3	2
Labour required	-1	-3	2
Best germination	2	3	1
Best yield	3	2	1
Total	**9 (+14-5)**	**10 (+17-7)**	**4 (+10-6)**
RANK	**2**	**1**	**3**


Section
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SECTION 10

DEVELOPMENT OF MARKETING INITIATIVES

OBJECTIVE

To improve market opportunities for garden produce, and maximise income generating potential and the benefits of catchment protection, without threatening food security.

STEPS

1. Establish Community Management Structures for Marketing Activities
2. Develop Skills and Information for Marketing
3. Implement Garden Marketing Strategies
4. Adopt Systems for Long-term Marketing Success

SUMMARY OF THE PROCESS

In Communal Areas, little extension is provided on marketing, and planned marketing of garden produce is rare. Participants often want to immediately earn an income from irrigated gardens. It is important to develop marketing strategies gradually, depending on the capability of the people involved, working from local to regional to larger markets. Realistic expectations should be set for marketing, and food security needs should always be met. Right from the onset, portions for home consumption and portions for marketing are differentiated to ensure household food security.

Marketing Task Forces are usually formed from the Irrigation Committee since production and marketing are inter-related activities. The Task Force takes the lead on market research and spearheads the development of the garden's marketing strategy. CARE and partners facilitate the collection of market information and the design of an appropriate marketing programme given the current environment and the capability of farmers. Marketing is improved using a phased approach. CARE and Agritex work with participants to make sure the most appropriate market is targeted, building on current farmer capacity and addressing logistical constraints to enable entry into higher value markets over time. Most communities begin by reaching local cash markets then move to larger markets (regional, wholesale, export). The overall strategy is to examine the supply and demand of the market before producing vegetables, so that they grow what is needed by the market, rather than trying to sell what they have grown without taking the market into consideration. Communities often develop a co-ordinated approach to marketing produce, although individual sales also occur. Co-ordinated marketing and good quality and quantity of crops is needed to secure larger contracts. The longer the garden is in operation throughout the year, the more potential there is for food security and successful marketing.

In improving market linkages between the community and the client, CARE acts as a facilitator only. CARE is never the link; for example, CARE does not provide or subsidise transport of garden produce to markets. The community must be able to continue marketing activities after CARE exits, and is trained to adapt to the real environment.

SECTION 10 DETAILED OVERVIEW

Step 1 Establish community management structures for marketing activities

Step 2 Develop skills and information for marketing

Assess capacities within the IC, Marketing Task Force and garden participants
Identify appropriate marketing strategy
Conduct technical training and market research exercises

Step 3 Implement garden marketing strategies

Step 4 Adopt systems for long-term marketing success

Conduct training in record keeping and contract management
Monitor and evaluate marketing success

Step 1

ESTABLISH COMMUNITY MANAGEMENT STRUCTURES FOR MARKETING ACTIVITIES

Just as structures are in place to manage specific activities related to catchment protection and agronomy, so too is there a need for a community-based management structure responsible for marketing.

Community management structures for marketing activities may have already been formed (see Section 4). Often, a Marketing Task Force is created from the Irrigation Committee, and is responsible for leading marketing research activities and creating marketing linkages.

If a Marketing Task Force is elected from other garden participants, the Field Officer reviews the key issues from the "Community Resources Training Manual" —Module 1, Lesson C "Leadership Concepts"— (as necessary), and helps make arrangements for elections. If the IC is selecting Task Force members to assume marketing responsibilities, participants should be asked for nominations.

The Marketing Task Force needs a clear purpose, requires skills training and confidence building, and needs resources to contact potential customers. The Task Force may require training in project management; refer to the "Community Resources Training Manual" —Module 2 "Project Management"— as necessary.

Step 2

DEVELOP SKILLS AND INFORMATION FOR MARKETING

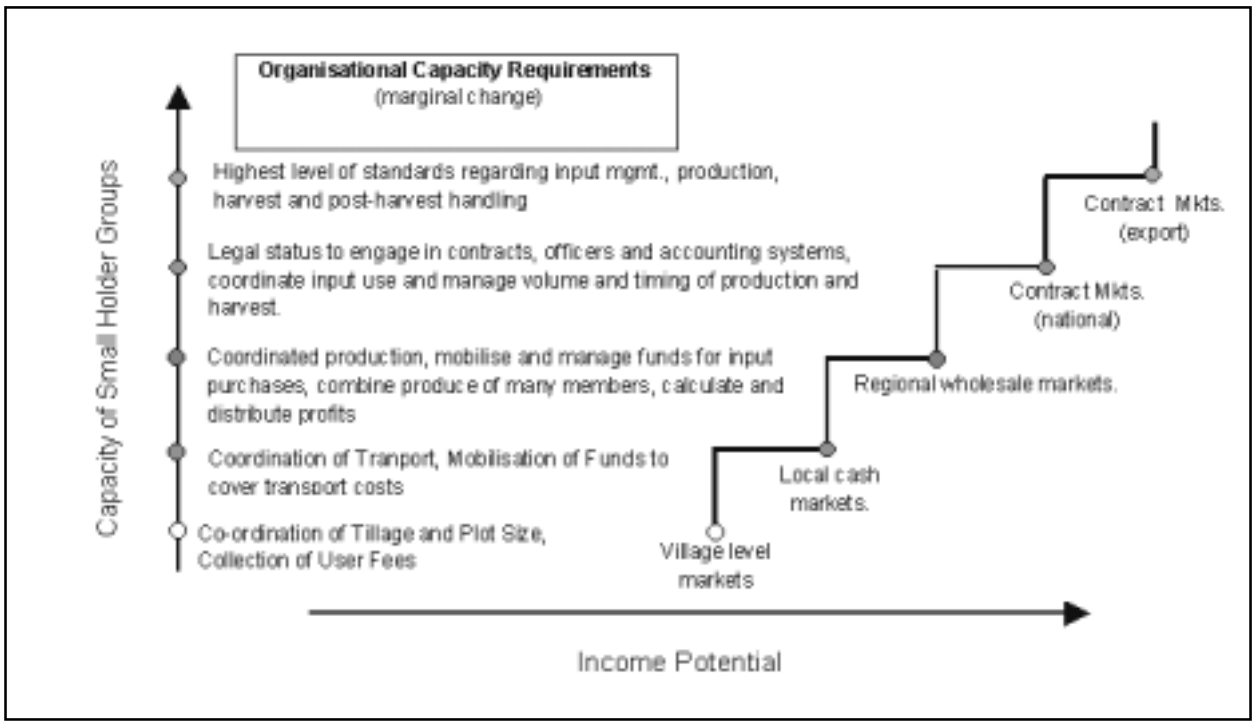
Participants require training to raise their awareness on marketing issues, and to facilitate the gathering of market information and development of a strategy.

ASSESS CAPACITIES WITHIN THE IC, MARKETING TASK FORCE AND GARDEN PARTICIPANTS

The Field Officer, CARE marketing specialist, and Agritex determine current skills in marketing before they begin the training programme. They do a participatory training needs assessment to specify training content, extension methods, timing of lessons, amount of training, and follow-up that is most appropriate for the audience. This assessment is done using different methods to gather the information, including group discussions and exercises, interviews, questionnaires, observation and documents.

IDENTIFY APPROPRIATE MARKETING STRATEGY

Many communities are unable to reach high-income markets during implementation because they lack capacity (productive, marketing, organisational) and face other constraints, such as distance from the market. Given this, most communities are best suited for reaching local markets while still improving their household food security. A phased approach is taken to adopt different marketing strategies and reach new markets over time, as experience is gained in production and new opportunities become available. Each step requires a higher level of organisation and skill within the community.



The Field Officer, IC and Marketing Task Force identify the most appropriate marketing strategy for the community before training begins, recognising that this strategy evolves as it is implemented. This approach is shared with garden participants.

CONDUCT TECHNICAL TRAINING AND MARKET RESEARCH EXERCISES

A training session is organised on marketing topics, particularly for the Marketing Task Force. The content follows the "Community Resources Training Manual" —Module 7 "Marketing"— which covers the following lessons and topics:

- Lesson A: Marketing Concepts
  - Defining marketing
  - Different marketing strategies
  - 5 "P"s of marketing

- Lesson B: Reaching Markets
  - Market survey (catchment mapping)
  - Cropping calendars
  - Market operations

The training programme is tailored to suit the particular marketing strategy of each community. Lesson A is designed to increase awareness of marketing principles. Lesson B facilitates information collection to understand the requirements of identified markets and to design a participatory marketing plan for garden participants. Surveys focus first on local markets —local vegetable production, household consumption patterns, local demand for garden vegetables, current prices and likely profit margins, etc. The Marketing Task Force and other participants visit potential markets to see which crops are required, when they are required, and quantities needed. They also find out which crops are in short supplies at different times of the year.

Cropping calendars are developed for the garden. A market-based cropping calendar plans production to meet market demand.

IMPLEMENT GARDEN MARKETING STRATEGIES

Based on available information, the Marketing Task Force develops and implements a strategy for marketing produce, including the target market and crops, timing, and quantities.

Horticultural produce is prone to seasonal fluctuations, with periods of shortages and gluts. Initially, the aim of community marketing strategies is to avoid the gluts by growing crops during seasons when they are more difficult to grow. Pest and disease control is critical, and support from agronomy specialists is needed. This approach results in greater returns as prices tend to double in the off-season, owing to unavailability of the produce. Once participants begin to realise significant income and their crops have a ready market, they are more likely to engage in year-round production, rather than the more common dry-season-only production calendar.

Participants often market produce using a group (co-operative) approach, but individual garden sales also occur. Any arrangement is acceptable as long as it is decided by the group and provides equitable opportunity for financial benefits. At some sites, garden participants purchase inputs with their own money (from user fee contributions) and make a combined nursery, from which they later transplant seedlings.

Different possible marketing strategies include:

- *Selling to traders/middlemen*
- *Selling to buyers directly at the garden*
- *Bulk marketing by garden members*
- *Building storage facilities to improve timing of sales*
- *Processing to improve timing of sales or sell different products*
- *Securing large contracts*
- *Securing loans to arrange transport*
- *Co-ordinated marketing of produce with a nearby garden to increase volumes, or reduce competition*

Women favour strategies that result in buyers coming to the garden directly as it does not result in a heavier workload for them. Production at periods of peak demand is one way to achieve this, as there will be shortages of the product and buyers are willing to travel longer distances.

The Field Officer provides on-going support to the IC/Marketing Task Force in a number of areas as they continue with marketing activities. For example:

Marketing information: After training is done, CARE often needs to provide on-going support to improve the capacity of the Task Force and participants to continually gather information on the requirements of their targeted market and new markets.

Crop production: Technical advice is provided by CARE and Agritex on types of crops to grow, control of pests and diseases, harvest times, etc. (see Section 8). Crop diversification should be encouraged to spread risk and expand crop sales. Women are reluctant to take risks with new crops —a demonstration plot in the garden to experiment with different crops is useful.
Product quality: Training covers the importance of a quality product when marketing garden crops.

Customers want good quality products if they are going to spend money. Garden members must be careful with certain aspects of marketing operations that affect product quality and customer perceptions —handling, harvesting, grading, packaging, processing, storage, promotion, transportation and selling. Building a good reputation attracts buyers.

Work scheduling: Duty rosters can be developed to make sure somebody is always at the garden when buyers visit, or when vegetables are taken to market. Alternatively, certain days can be set aside every week as market days.

Food processing: Once gardens are in production, training is done on different types of processing methods. This training is especially useful when there is an over-supply of vegetables which would ordinarily be left to rot, helps with storage problems, and adds value to marketed products. The content follows the "Community Resources Training Manual" — Module 7, Lesson D "Food Processing"— which covers the following topics:

- Principles of solar drying
- Building a solar dryer
- Using solar dryer products

Other CARE programmes targeting food processing and nutrition issues have linked to SDCRMP in the past.

ADOPT SYSTEMS FOR LONG-TERM MARKETING SUCCESS

The IC and/or Marketing Task Force is responsible for managing marketing operations over the long term, especially if co-operative marketing is done. Without community-based systems in place that support on-going management, marketing operations will be less successful.

CONDUCT TRAINING IN RECORD KEEPING AND CONTRACTS

A training session is organised to ensure members (especially the IC and Task Force members) understand the need for records and the costs and benefits of contracts. The content follows the "Community Resources Training Manual" —Module 7, Lesson C "Marketing Management"— which covers the following topics:

- Reasons and rules of record keeping (marketing)
- Production and sales records
- Contractual agreements

Production and sales records help in deciding how much to grow for consumption and sale, in pre-planting budgets, in monitoring and improving production levels, and in determining profitability. Records help with pre-planting budgets, so farmers can plan for input purchases before they begin larger scale production. If good records are kept, CARE can use the information to help evaluate programme impact (see Annex 10.1).

Garden participants must be well informed before entering into formal contracts. By this stage, groups should have developed the skills to do a comparative analysis of their existing markets and the proposed market offered by the contract. Groups should spread their risk and not depend on a single client, but have various options. Of critical importance in entering a contract (either formally or informally) is to be able to manage the quantity and quality of produce supplied, and to be able to deliver goods on time.

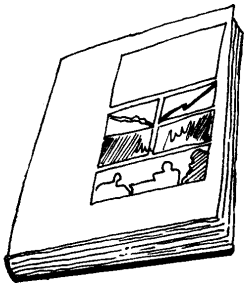
Communities should remember that contracts can be complex and problematic, but that verbal agreements can be unfair to the farmer. Farmers need to be aware that better deals are possible through non-contractual marketing if they have the appropriate skills.

MONITOR AND EVALUATE MARKETING SUCCESS

After each harvest, a post-production meeting is held with all garden members to review the last production cycle and plan for the next. The success of marketing activities is evaluated according to criteria determined by the community, and decisions on marketing strategies are discussed. The Field Officer and CARE marketing specialist work with the Task Force to facilitate selection of the next marketing strategy based on the lessons learned during the previous growing season. Cropping programmes are made every 4-6 months.

For further information related to marketing, please see:

- *CARE Zimbabwe. Vegetable Production in Irrigated Gardens*
- *CARE Zimbabwe. Market Research for Horticultural Produce*
- *CARE Zimbabwe. Community Resources Training Manual*
- *Lovell. Water Points in Dryland Areas*



Section 10 Annex

Annex 10.1 Example – Production and sales record

Production Records

Year 2001	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Notes on seed source, soil preparation, nutrients, plant growth, pests & diseases, yield
Vegetable													

Production and Income Records

Crop	No. of beds	Size of bed	No. of plants per bed	Total No. of plants (yield)	Price per unit	Income per bed	Total income

Income and Expense Records (by month)

Date	**Item**	**Number**	**Cost per unit**	**Total expense**	**Total income**	**Balance**
1 June	Opening balance					**0**
2 June	Rape seed	2 packets	70	140		**- 140**
2 June	Tomato seed	1 packet	155	155		**- 295**
2 June	Compound D (maize)	1x50 kg	950	950		**- 1245**
2 June	Chemicals (tomatoes)	2 packets	350	700		**- 1945**
2 June	Bus fare to Masvingo	2	150	300		**- 2245**
10 June	Tomato sales	20 kg	200		4000	**1755**
11 June	Sugar cane sales	5 sticks	10		50	**1805**
28 June	Rape sales	20 bundles	20		400	**2205**
30 June	Maize seed	1 x 10 kg	950	950		**1255**
Totals				- 3195	4450	
30 June	Closing balance (to be carried over to the next month record)					1255

Summary data for June

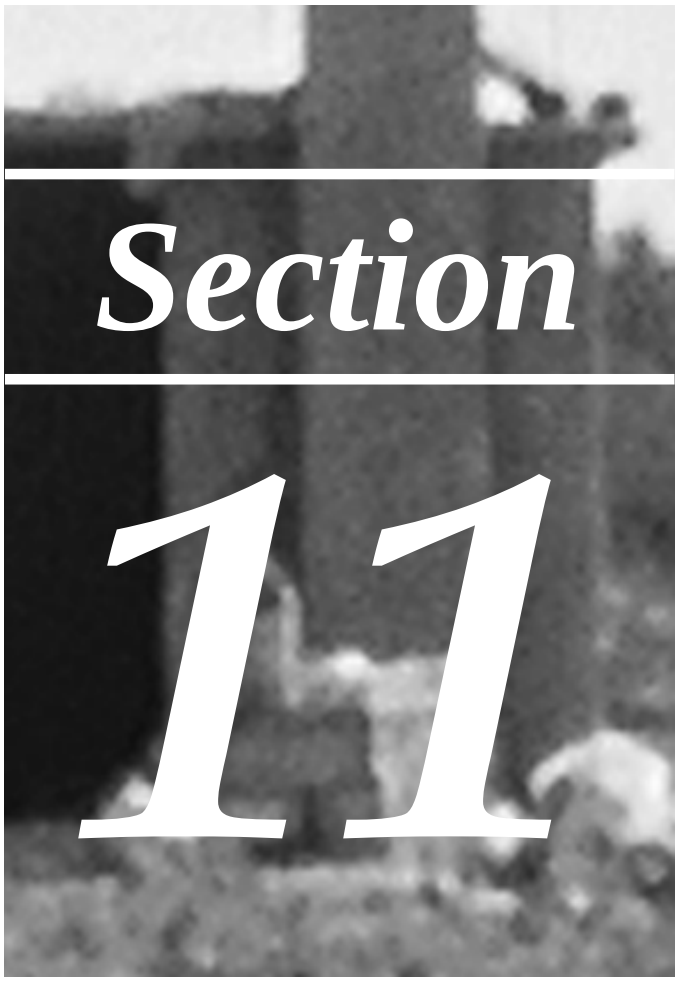
Crop	Total purchases	Total sales	Balance
Tomato	1155	4000	2845
Sugar cane	-	50	50
Rape	140	400	260
Maize	1900	0	-1900
Totals	3195	4450	1255

Expense Records (e.g., rape crops)

Date	Item	Number	Cost per unit	Total expense
2 June	Rape seed	2 packets	70	140
2 June	Compound D	1x50 kg	950	950
2 June	Chemicals	2 packets	350	700
2 June	Bus fare to Masvingo	2	150	300
Total				2090

Income Records (e.g., rape crops)

Date	Item	Number	Cost per unit	Total expense
10 Sept	Sale of rape	20 bundles	30	600
11 Sept	Sale of rape	2 bundles	30	60
28 Sept	Sale of rape	35 bundles	40	1400
Totals				2060



Section 11

SECTION 11 ENVIRONMENTAL HEALTH

OBJECTIVE

To improve water supply and sanitation systems, and reduce the risk of environmental health problems around the dam

STEPS

1. Conduct Training on Environmental Health Issues
2. Reduce the Risk of Contamination to the Dam
3. Improve Water Supply and Sanitation Infrastructure

SUMMARY OF THE PROCESS

Small dams can pose a potential health risk to communities for a number of reasons. Water in the dam is at risk of contamination from livestock and human activity in the catchment area, especially when proper hygiene infrastructure is not in place and when cattle roam freely around the dam. The water from the dam is not treated, and may contain bacteria and viruses that can spread disease. Small dams should not be used as a source of water for domestic purposes. As well, small dams can be a source of the bilharzia virus, as the snail host prefers bodies of standing water.

Because of these risks, the programme addresses environmental health issues, in an effort to reduce the prevalence of water-related disease. Community awareness on environmental health issues is raised. Training sessions target the social catchment, and are done using a participatory approach wherever possible. The dam and infrastructure is managed to minimise the chance of transmitting water-borne diseases such as cholera, typhoid and bilharzia, by restricting access to the dam by livestock and humans. Water supply and sanitation infrastructure is built to accommodate project participants.

CARE works closely with government extension workers, namely the Ministry of Health's Environmental Health Technicians, who are based out of health clinics, and the Ministry of Youth, Development, Gender and Employment Creation's Village Community Workers, who are based in each village. These extension workers have the appropriate training, job responsibilities, and long-term links within the community to effectively address health issues. CARE facilitates the linkages between health extension and the communities.

Environmental health education can provide an entry point into the community for the implementation of other health-related activities (see Section 12).

SECTION 11 DETAILED OVERVIEW

Step 1 Conduct training on environmental health issues

Step 2 Reduce the risk of contamination to the dam

Relocate small gardens
Restrict access to the dam
Build alternative watering points for livestock
Build laundry and bathing areas
Organise a snail survey

Step 3 Improve water supply and sanitation infrastructure

Create alternative sources of drinking water
Build latrines in the garden
Develop rubbish pits

CONDUCT TRAINING ON ENVIRONMENTAL HEALTH ISSUES

Before environmental health activities can begin, the community requires a good appreciation of the health issues and risks. The community needs to understand the health reasons for restricting access to the dam, and the reasons for investing in hygiene infrastructure.

As part of pre-implementation activities, the Field Officer identifies the health clinics and extension workers servicing the community. CARE also liases with provincial and district health units. The Field Officer works with Environmental Health Technicians (EHTs), who are based out of health clinics, and Village Community Workers (VCWs), who are based in each village. These extension workers have the appropriate training, job responsibilities, and long-term links within the community to effectively address health issues.

Working with these partners, the Field Officer organises a training session for the community-at-large on environmental health issues. At a minimum, the content of the meeting covers the following health issues:

- Bilharzia
- Malaria
- Diarrhoea diseases
- Safe water use

The purpose of this training is to introduce a basic understanding of environmental health issues, the major risks of disease, and the conditions that lead to these risks. The training may need to extend over more than one session. The training provides theoretical information and practical strategies for reducing risk, both in the community and at homesteads. The Field Officer and partners may need to hold a number of these training sessions in the community (including at schools).

Based on the level of interest and need in the community, a health group can form after this training to target priority health issues in the community (see Section 12).

Often, government health extension workers do not have the appropriate training or experience to support a community-management approach; they are more used to providing information in a top-down manner to households. CARE has worked with other NGO partners (Zimbabwe AHEAD) to train extension workers in participatory methodologies. Zimbabwe AHEAD has developed a range of participatory tools to use in disseminating health information in rural areas. Extension staff in one district are trained in these tools. Health Clubs are formed in communities, and receive health education from these newly trained extension workers. A curriculum is covered over a 6-month period. Topics include household hygiene, disease transmission, water sources and storage methods, skin and eye diseases, etc. Attendance cards are kept to ensure participants attend every session. The programme includes theory and practical exercises. Upon graduation, the Health Club becomes an entry point for community and household-level health interventions. Health Clubs also encourage non-members to join, and can provide health information in their community.

Step 2

REDUCE THE RISK OF CONTAMINATION TO THE DAM

Although the water in the dam is not intended for drinking, it is often used for this purpose. Therefore, not only are humans and livestock restricted from the dam micro-catchment to reduce erosion, they are also restricted to reduce the risk of water contamination. Alternative facilities are developed to ensure people and animals stay out of the dam micro-catchment. All infrastructure is built using experienced local builders.

RE-LOCATE SMALL GARDENS

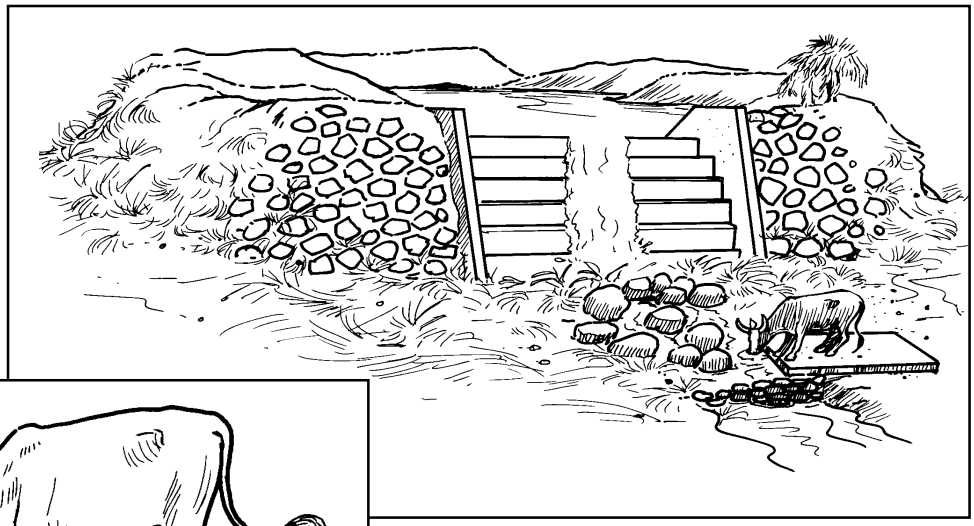
Any small gardens in the dam micro-catchment are re-located, not only to reduce the risk of erosion, but also to avoid contaminating the water body with chemical sprays or other human contaminants.

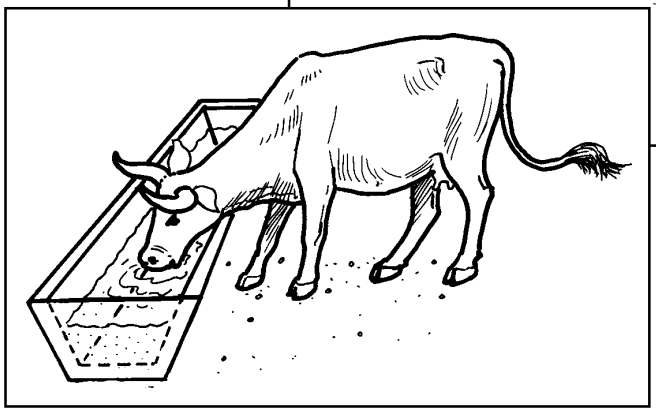
RESTRICT ACCESS TO THE DAM

The dam micro-catchment is fenced not only to reduce the risk of erosion, but also to avoid contamination from livestock and humans into a water body that may be used for drinking purposes (see Section 7 for details on fencing).

BUILD ALTERNATIVE WATERING POINTS FOR LIVESTOCK

Because the dam is fenced and to avoid contamination by livestock, alternative watering points for cattle and other livestock are built, usually downstream of the dam.



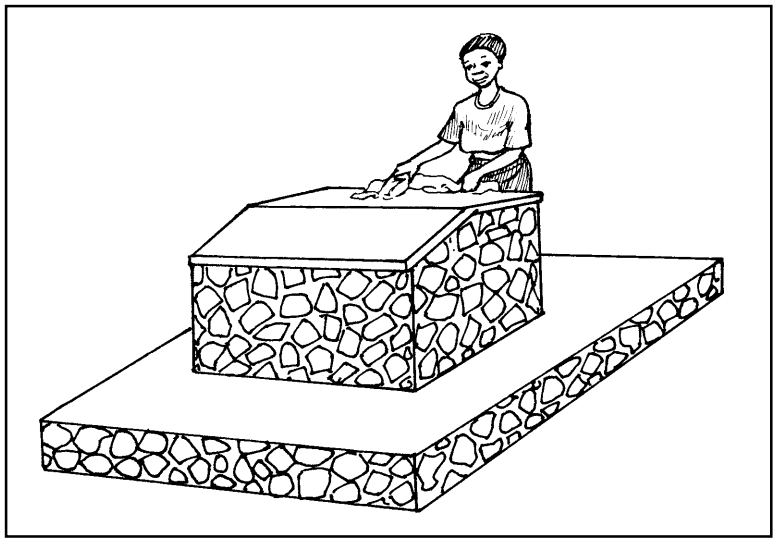


Livestock drinking troughs can be built using masonry, farm or cement bricks, or cement moulds. Small weirs in areas downstream of the dam can also be developed as simpler livestock watering points. The drinking trough needs to be strong enough for regular use by cattle, and often a poured reinforced concrete trough provides the strongest construction. Water can enter the trough through pipes from the dam or irrigation system, from the seepage or spillage from the dam, or troughs can be filled by hand. To reduce erosion, the area around the trough should be stone paved.

Watering points facilitate the treatment of animals with additives and prevent diseases such as foot rot. The Department of Veterinary Service helps the community locate the ideal position and provides advice on construction.

BUILD LAUNDRY AND BATHING AREAS

Proper facilities for laundry and bathing are built downstream of the dam to avoid contamination of the dam with detergents, etc. Waste-water from these facilities should drain downstream, preferably to a soaker trench sited close to or inside an orchard to help water the plants. The Field Officer and EHT prepare designs with the community.



ORGANISE A SNAIL SURVEY

The community can do a dam snail survey, with support from Ministry of Health, to control bilharzia. Plants which host the snails are removed from the dam and special grasses planted around all water points to deter the snails. A testing programme can also be organised with Ministry of Health to see if bilharzia is a problem in the community.

CARE worked with Blair Research Institute and Ministry of Health to assess bilharzia transmission in 15 communities. A brief health education session was held, then samples were collected, mainly from school children. The results showed that 30% of those people tested were infected; treatment was provided. Infection was higher at some sites than others, due in part to low sanitation coverage, more fishing and swimming, and shortage of drugs in clinics.

A snail survey of dams was also done at three sites, but none of the snails collected proved to be carrying the disease, explained partly by the small size of the sample and the site-specific nature of the parasite.

Step 3

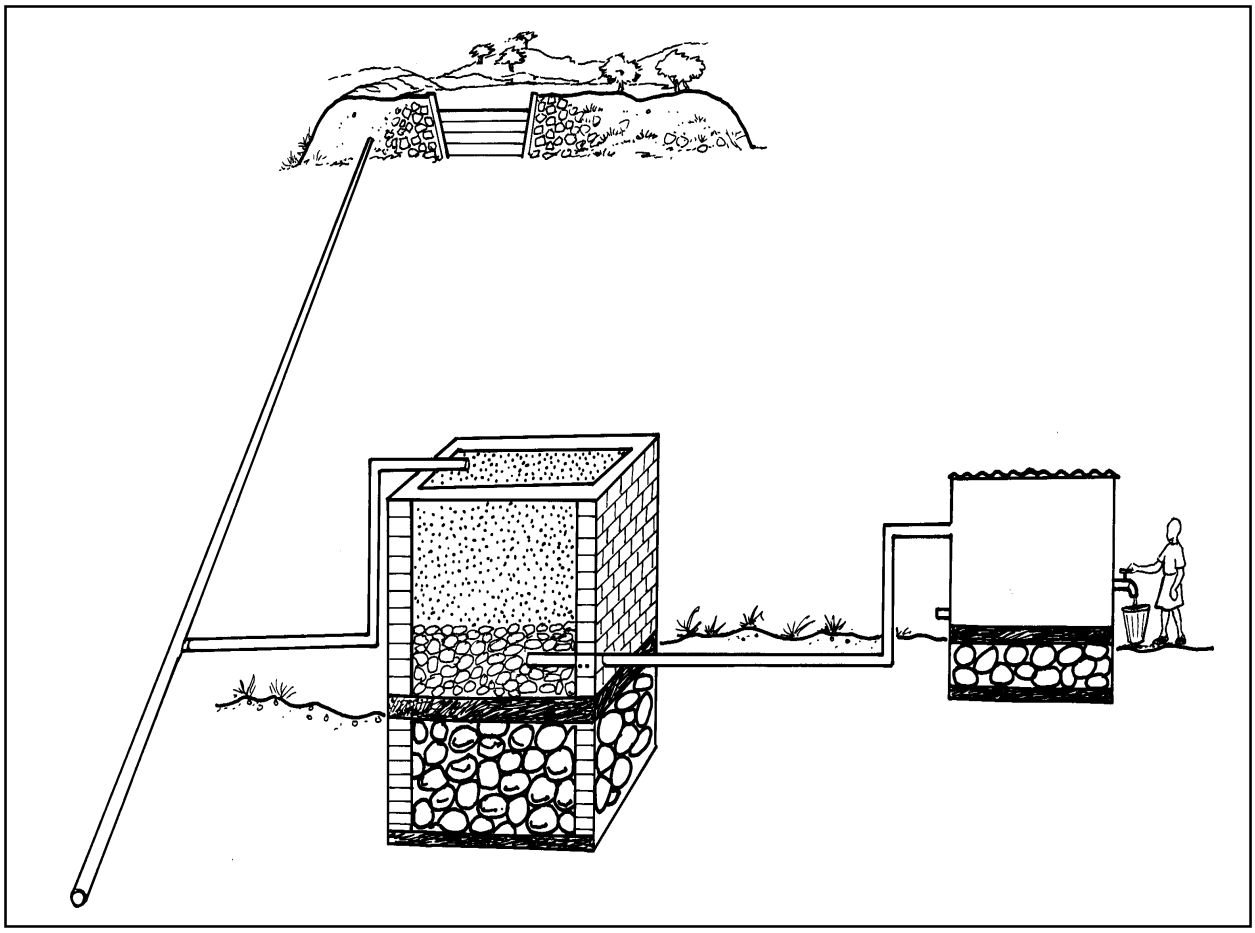
IMPROVE WATER SUPPLY AND SANITATION INFRASTRUCTURE

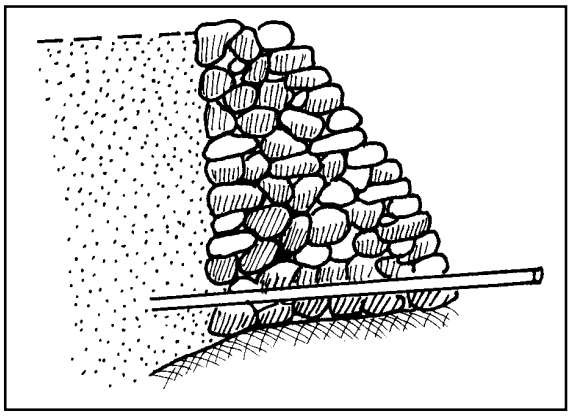
Because there are more people working around the dam and in the garden, water supply and sanitation infrastructure is developed to avoid hygiene-related problems. The community gathers locally available resources for construction, and CARE procures non-available resources. Experienced local builders are used.

CREATE ALTERNATIVE SOURCES OF DRINKING WATER

The Field Officer and EHT promote the use of borehole water for drinking and cooking. Regardless, many households will still drink water from the dam, especially people working in the garden. Despite efforts to improve water quality in the dam (e.g., fencing, moving gardens, etc.), this water may still harbour parasites and bacteria detrimental to human health.

One option for providing clean water closer to the garden is to dig a well downstream of the dam wall. The well should be lined up to slab level under the supervision of the EHT, and a simple manual pump fitted to ease extraction. The water in the dam slowly filters into the well and is safe. Another alternative is the construction of filtration boxes below the dam wall or in the garden, with guidance from Ministry of Health. Water can be tested by EHTs and treated with chlorine if necessary.



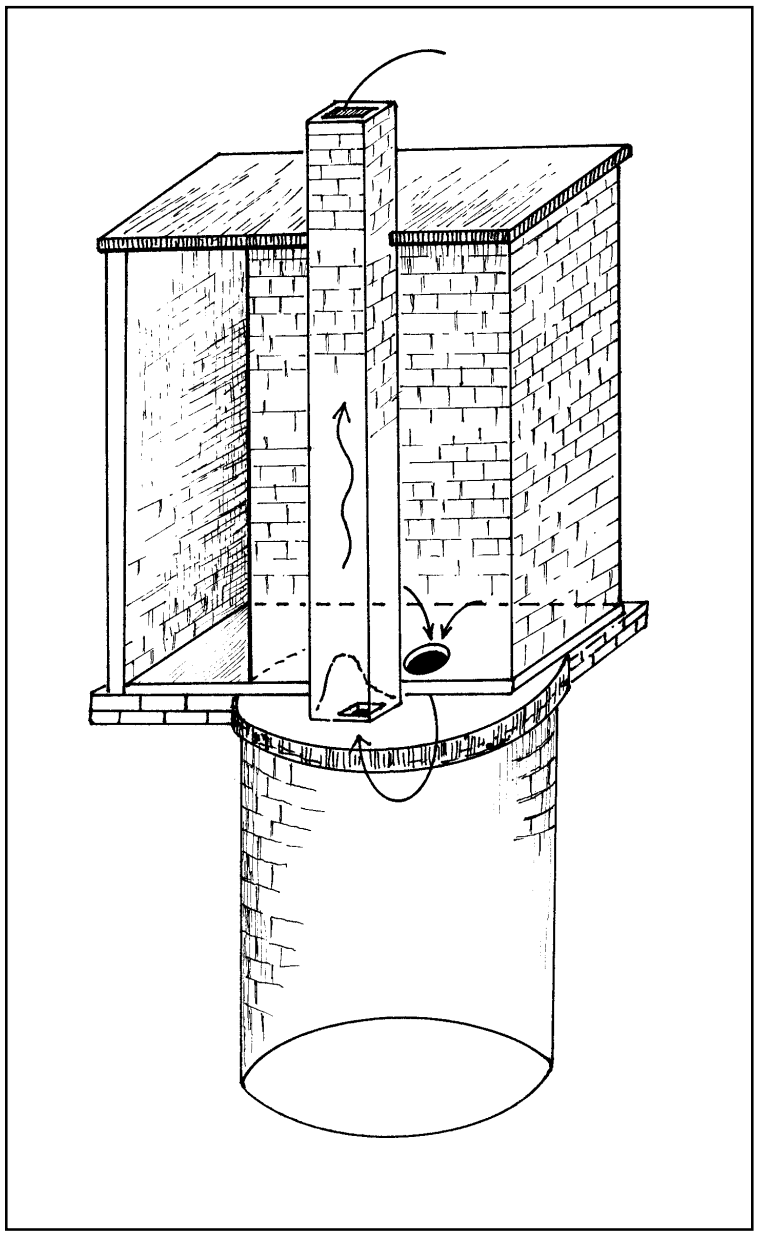


At some sites, small weirs are built along (often silted) streams to improve water supplies in a community. Weirs trap sand and use the sand's holding capacity as a way of storing water. A deposit of river sand can hold between 30-40% of its volume as water, and because it is sub-surface, this water does not evaporate. The sand filters the water, often making it suitable for drinking. The weir must be able to withstand heavy flooding, and must be leak proof.

If alternative water sources are not available, then dam water must be sterilised by boiling or using pills in accordance with EHT advice.

BUILD LATRINES IN THE GARDEN

Blair latrines, with hand washing facilities, are built in the garden at the rate of 1:25 people. This prevents both the contamination of the dam water and the surrounding area with faecal matter, and reduces the risk of disease being transmitted through bad hygiene. Ministry of Health provides plans.

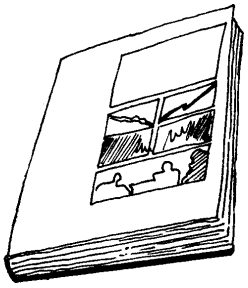


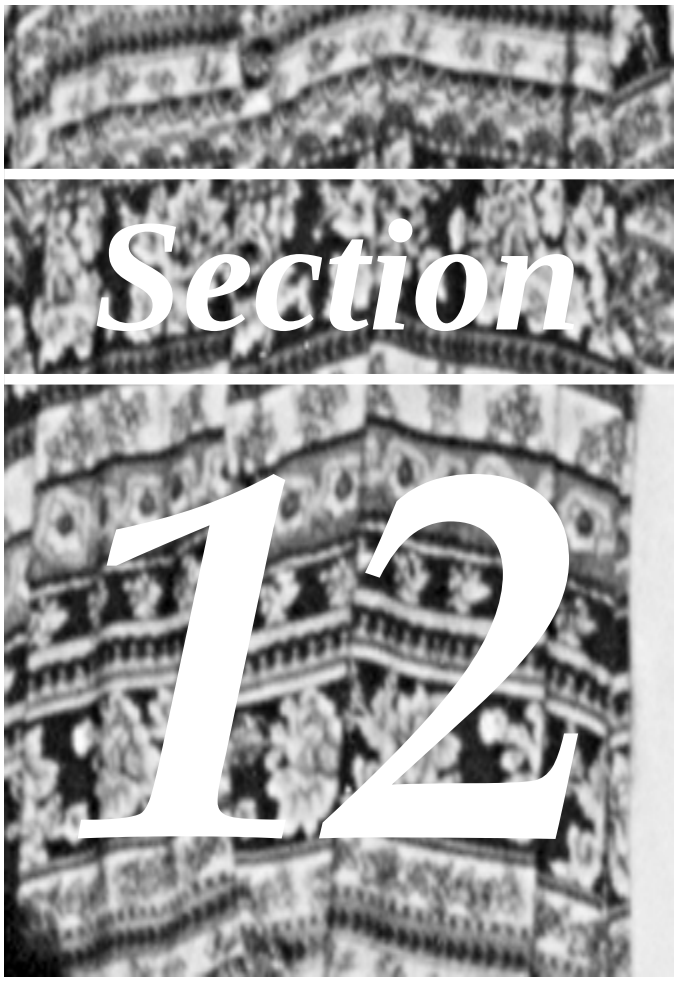
DEVELOP RUBBISH PITS

Refuse disposal pits are built around the dam and garden, since more people will be working in these areas, to avoid a build-up of rubbish.

For further information related to environmental health, please see:

- *Blair Research Institute. Blair Latrine Construction Guide*
- *CARE Zimbabwe. Health Education Volunteer Training Guide*
- *Morgan. Rural Water Supplies and Sanitation*
- *Watermeyer. Small Earth Dams and Weirs - Implementation Manual*




Section
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SECTION 12

COMPLEMENTARY INITIATIVES

OBJECTIVE

To link agricultural and natural resource activities of small dam rehabilitation with complementary initiatives, particularly for health and economic development.

STEPS

1. Review Assessment Priorities with Communities
2. Refine/Expand Management Structures
3. Initiate Complementary Activities

SUMMARY OF THE PROCESS

In developing and implementing the SDCRMP, CARE recognised the opportunity to use rehabilitation of small dams as a community development platform to address (in a holistic manner) the wider range of environmental, technical and socio-economic issues facing households. CARE has also found that focusing community activities on a common property resource helps strengthen social development elements of interventions, leading to better social capital networks in a community that support initiation of other complementary development activities. The HLS framework adopted by CARE has helped the SDCRMP be aware of the multi-dimensional aspects of livelihood security that need to be considered.

In an effort to maintain coherence and sectoral expertise, these complementary technical and social components are designed to build on each other, yet be sectorally sound and achieve effects independently. For example, if a healthy household is better able to increase agricultural production, sufficient financial gains can be realised (through marketing) to initiate a small-scale enterprise. Using improvements to the productive base as an entry point for a variety of sectoral interventions, each initiative is inter-related through an approach that seeks to better equip and organise communities to respond to whatever needs or rights they define as priorities (see discussion in Background and Guiding Principles).

Though complementary initiatives are presented in a sequential manner, often they are occurring simultaneously or, in fact, independently of other community-based activities. Each of these initiatives has been developed and implemented as separate CARE projects.

DETAILED OVERVIEW

Step 1 Review assessment priorities with communities

Hold a community meeting to discuss complementary initiatives
Identify resources and entry points
Refine and/or expand plans

Step 2 Refine/expand management structures

Step 3 Initiate complementary activities

Health communication and management
Prevention and community support for people affected by HIV/AIDS
Farming and natural resource production and management systems
Enterprise development opportunities and activities
Access to resources, inputs and services

REVIEW ASSESSMENT PRIORITIES WITH COMMUNITIES

Once community-based infrastructure activities are underway and management structures are working effectively, it is important to revisit the development priorities defined by communities at the outset of the programme.

HOLD A COMMUNITY MEETING TO DISCUSS COMPLEMENTARY INITIATIVES

The purpose of this meeting is to refresh awareness with regard to other complementary initiatives discussed at the outset of the programme and to plan what activities are appropriate to initiate to build on progress made to date. The content of the meeting should follow the "Community Resources Training Manual" —Module 1, Lesson A "Project Awareness" in its approach, though substituting the SDCRMP topics with those specific to:

- Health communication and management
- Prevention and community support for people affected by HIV/AIDS
- Farming and natural resource production and management systems
- Enterprise development opportunities and activities

The choice of topics and activities to be discussed will be based on community priorities as well as opportunities presented by progress in other areas. For instance, though a community priority may indicate marketing of garden produce as a high priority, it may be necessary to first establish saving clubs (to facilitate bulk purchase of agricultural inputs) or identify potential agricultural input Agents as the first step in reaching this objective (see Step 3). During this meeting it is not necessary to commit to a particular sector or activity. Instead, how the community envisions these additional activities will be integrated into on-going plans needs to be heard.

IDENTIFY RESOURCES AND ENTRY POINTS

Following the community meeting, it is critical to hold a meeting with staff and stakeholders to discuss how potential community priorities can be supported. A number of critical questions will need to be resolved, including:

- Are resources (human, financial, etc.) available?
- What are the key leverage points?
- What is the capacity of CARE and/or partners to support complementary initiatives?
- What follow-up information is required from communities? From partners?

REFINE AND/OR EXPAND PLANS

Based on community needs and available resources, an overall plan is redefined with the community. This plan revisits the one developed in Section 4 (Step 2) and determines if it remains valid or needs to be modified.

Step 2

REFINE/EXPAND MANAGEMENT STRUCTURES

If new activities are being initiated, different management structures may be needed to take the lead on new work.

Once activities are decided upon, new or different types of management structures often need to be considered. Ultimately, this may involve expanding community Social Contracts with regards to growing responsibilities, or assisting groups to draft membership roles and responsibilities. Each type of initiative (see Step 3) demands different management considerations.

If representative committees are being elected, the Field Officer reviews the key issues from the "Community Resources Training Manual" —Module 1, Lesson C "Leadership Concepts" (as necessary)— and helps make arrangements for committee elections.

INITIATE COMPLEMENTARY ACTIVITIES

For the purpose of the SDCRMP and Zimbabwe's particular context, five complementary initiative streams have been identified and piloted, and each has its own comprehensive implementation process. For the purpose of this document, it is only to indicate how these initiatives are linked within the SDCRMP framework.

HEALTH COMMUNICATION AND MANAGEMENT

Although many activities contribute to the health status of a population, CARE's focus is on environmental health, nutrition, and HIV/AIDS (see next section). Entry points for health interventions have traditionally been varied, depending on the type of community groups and activities underway, as well as the communication tools used to increase knowledge. Entry points have included Water Point Committees, garden groups, Enterprise Groups (see later discussion), income generating activity (IGA) groups, etc. Sometimes, new Health Clubs have been started for interested community members. A different emphasis is likely depending on the audience; for example, garden groups are a useful entry point for nutrition and dietary diversification interventions, Water Point Committees are useful for community-level environmental health interventions, and IGA groups are useful for household-level environmental health interventions. Whatever group is involved, members themselves prioritise their activities.

Awareness raising is the first step in any health intervention; training uses both theoretical and practical approaches, identifying not only what causes health problems but also household practices for prevention. Once finished, groups determine actions to take based on their new knowledge. These actions have included development of community water and sanitation systems, either as part of the productive water point or as a separate effort. Community management systems are put in place for on-going operation and maintenance of these systems (e.g., Water Point Committees). Health actions have also included improving household water and sanitation systems —through Enterprise Groups that use part of their savings or income to improve household latrines or water sources— or improving the nutritional value of agro-processing activities. As household knowledge on the importance of nutrition increases, more households access micro-nutrient fortification services at local hammer mills (see later discussion). Some of the groups, or the wider community, formed community health institutions (either as an entry point, or later on during implementation) to take more responsibility for local health initiatives. Health committees or "Clubs"[1] often become a logical entry point for addressing specific community health problems, building on services that communities once depended on from government, or improving access to these services where linkages have eroded. Actions could then include child growth monitoring, bilharzia monitoring, improving extension to non-participating households, etc. Health Clubs, or any groups receiving health awareness information, could

[1] The Health Club methodology, developed by Zimbabwe AHEAD and used by CARE in some projects (see Section 11), follows a series of training sessions on different health topics, using participatory tools. Training uses both theoretical and practical approaches, identifying not only what causes health problems but also household practices for prevention. Attendance cards are kept, and once participants complete all of the topics, they are awarded a certificate. These clubs are used as an entry point for community and household-level health and hygiene interventions, and slowly develop income-generating projects.

also be the entry point for improving communication on and community-based support for HIV/AIDS (see next section).

PREVENTION AND COMMUNITY SUPPORT FOR PEOPLE AFFECTED BY HIV/AIDS

Improving community-based prevention and support mechanisms for HIV/AIDS-affected households is critical for protecting the productive base in Zimbabwe. In an effort to increase coverage, promotion and support for these types of activities, SDCRMP has worked both directly with communities, and indirectly through AIDS Services Organisations (ASOs), where they exist. ASOs have played a major role in long-term outreach to vulnerable households through various programmes such as home-based care, peer education, and support to youth groups and orphans. Interventions have focused on: (1) developing new forums for discussion and awareness raising on HIV/AIDS-related issues in communities; and, (2) providing support to improve enterprise development opportunities for HIV/AIDS-affected households.

Facilitation skills that open communications on traditionally stigmatised topics, such as death, HIV/AIDS and sex, are strengthened in each community targeted. As communities feel more comfortable in discussing these sensitive topics, an increase in appropriate sexual behaviour is anticipated. CARE and trained ASOs have worked with secondary schools and out-of-school youth in the target communities. Youth are encouraged towards open communication about sensitive topics, and parents and community elders are also engaged.

A more targeted intervention has supported improved enterprise development opportunities for HIV/AIDS-affected households. Technical training on enterprise development (see later discussion) is provided to ASOs to help them better meet their clients' needs, and continue to provide services after CARE exits.

FARMING AND NATURAL RESOURCE PRODUCTION AND MANAGEMENT SYSTEMS

The SDCRMP aims to improve production from the sustainable utilisation of all resources —not only water (through development of productive water points), but also arable, grazing land, woodlands, and wildlife resources. Initial assessments (see Section 4) and participatory catchment plans (see Section 7) identify the farming and natural resources used by the community, and the constraints faced in maximising benefits from these resources (especially by resource-poor households). From this starting point, SDCRMP activities focus on interventions in the dam catchment area, particularly with respect to land degradation. Complementary to these activities is the promotion of agro-ecologically appropriate farming and natural resource systems to include a broader audience (i.e., the social catchment) and different resources (e.g., natural products, livestock, wildlife, etc.).

For arable areas, appropriate land conservation strategies can be promoted throughout the social catchment, particularly by improving community-based extension. The community nearest to the dam, who participate regularly in SDCRMP activities, can extend what they have learned to households that live further away. Similar methodologies could be used, such as the promotion of appropriate crops, production techniques, implements, etc. using farmer-led research and demonstration techniques. This would help address gaps in government services either now or in the future.

Experience has shown that less productive lands require different types of interventions. In communities where grazing areas have the most potential, complementary initiatives have focused on sustainable livestock production and management. Special efforts are made to improve access to draft animal power —a major constraint to resource poor farmers. Programmes by other NGO partners have been initiated in some communities to help re-stock cattle herds. Special Enterprise Groups could be developed as a group saving scheme to facilitate household loans for livestock and implement purchase. New IGAs have focused on small livestock production in some communities. In communities where natural resources such as forests and wildlife have the most potential, complementary initiatives have focused on obtaining economic benefits from the sustainable management of these resources.

In order to improve food security and income generation, storage and processing systems for various types of production taking place in the communities are also enhanced. Agro-processing has included a range of technologies, from solar drying of excess vegetable crops, to processing wild fruit into jam, to processing oil from improved sunflower crops. When successful, these agro-processing activities have developed into opportunities for income generation, for either groups or individuals. Increased access to rural agri-input suppliers (Agents) also ensures inputs promoted through SDCRMP and other interventions are available in the communities during implementation and after CARE exits (see later discussion).

ENTERPRISE DEVELOPMENT OPPORTUNITIES AND ACTIVITIES

Using various entry points, SDCRMP seeks to initiate new enterprises and strengthen existing enterprises within a supporting environment. Typically, Enterprise Groups are formed (through a self-selection process) in target communities. Special entry points have included existing support groups for HIV/AIDS-affected households (ASO clients or groups that emerge during implementation) struggling to improve their income opportunities, or groups of resource-poor farmers needing support to increase their livestock assets. Training is provided directly (or through ASO or other partners) to build the capacity of Enterprise Group members to manage their own savings and lending processes. Once sufficient savings have been capitalised and group cohesion is strong, interested members (either individually or as a sub-group) are given internal loans through the Enterprise Groups to finance start-up of IGAs and diversify income opportunities. IGA selection, planning and management (SPM) training is provided to these interested members to ensure suitable non-agriculture and agriculture-based IGAs are developed; for example, livestock production, agro-processing, tree nurseries, wire making, etc.

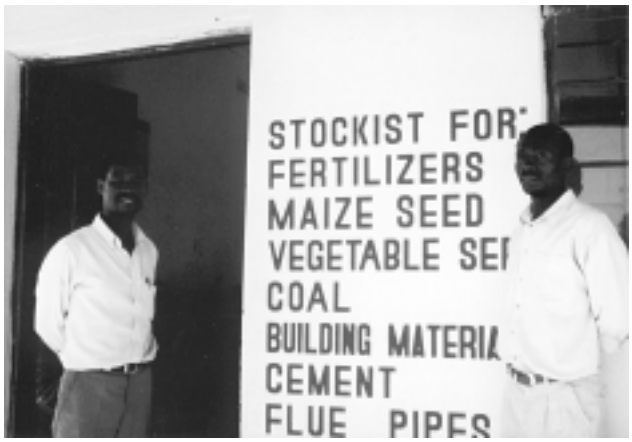
In parallel to this activity, complementary initiatives have targeted existing enterprises (including garden groups) in and around the community that are facing gaps and constraints to their growth. The growth of existing enterprises not only targets a different sub-set of households within the community than the above activity, but also creates secondary benefits of community economic development, employment opportunities, market development, etc. Following initial research and assessment, participatory sub-sector analysis is done with enterprises (including recently developed

IGAs, where appropriate) from at least three of the leading sub-sectors in the target areas. The analysis identifies key leverage points where a relatively minor intervention can have a major impact on enterprise growth; for example, linkages with higher value markets. Results of these analyses are shared to improve the relevancy of SPM training. Based on the sub-sector analysis, interventions to support enterprise growth have included management and technical training, market linkages, access to appropriate financial services, and disbursement of a business expansion fund. The provision of these types of services after CARE exits has been improved through the development of Enterprise Development Service Providers (EDSPs). Similar enterprises (particularly smaller operations) are encouraged to form associations as one way of accessing new services, achieving economies of scale, sharing information, etc.

Finally, both new and existing enterprises have been given support in reaching their markets. A step-wise approach to reaching markets —working from village, to growth point, to regional and more affluent markets— is promoted, depending on the capacity of each enterprise (whether it is a household, group or business). Participatory market studies are carried out with enterprises working in the same sub-sector, to help them understand their local market, adjust their production and diversify to meet demands, and build new marketing opportunities. Based on these studies, interventions have focused on facilitating linkages between enterprises and markets (e.g., through stakeholder workshops, community cross-visits, etc.) for the on-going success of both new and existing enterprises in the community.

ACCESS TO RESOURCES, INPUTS AND SERVICES

The ability of communities to effectively manage their development requires sustained access to resources, inputs and services after CARE exits. In the past, CARE (with partners) has worked with community groups and individuals to develop realistic community-driven partnerships with appropriate locally available technical or social service providers (e.g., Agritex, local government, EDSPs, ASOs or other national NGOs). In particular, and to support CARE's interventions, mutually beneficial relationships have been developed with the private sector, such as improving services for agri-input supply and output marketing, maize fortification and enterprise development.



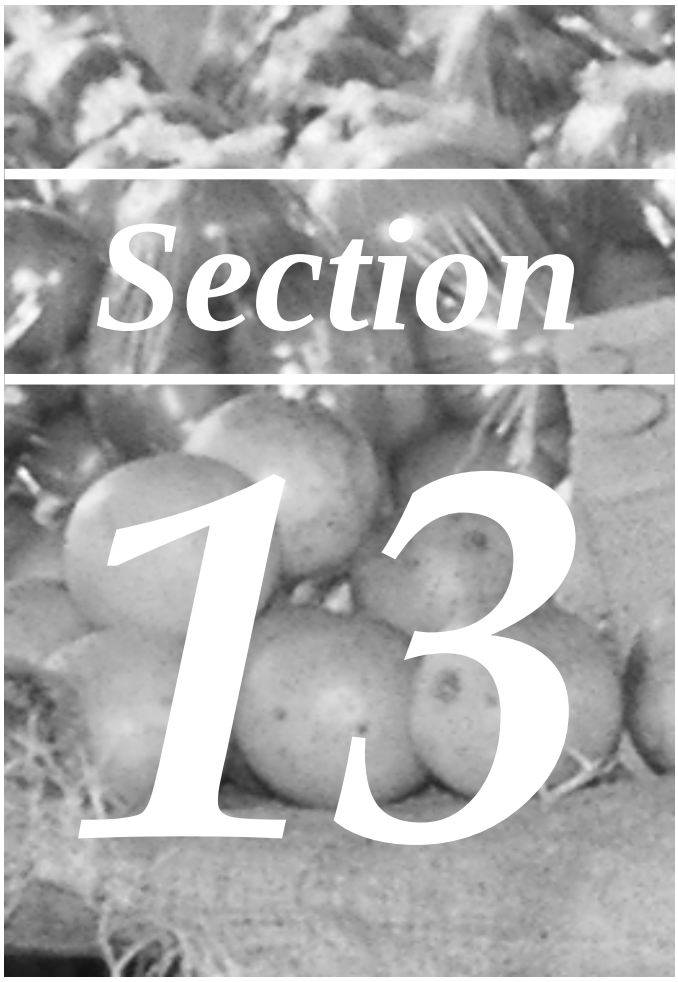
Problem analysis has identified affordability and access to agri-inputs as one of the leading constraints to increasing farm incomes. CARE's Agri-business Entrepreneur Network and Training (AGENT) Programme has used a private sector, market-driven approach to alleviate this problem. By making critical agricultural inputs available to farmers, within walking distance, rising transaction costs are

lowered and farmers are better able to capitalise on the unpredictable rains and react quickly to pest infestations. Following selection and training, the Agents are linked to wholesalers or suppliers on a short-term contractual basis to test their capabilities. During this time, CARE and the supplier share financial risks. At the end of the agricultural season, the Agents are evaluated, and graduating Agents will enter into permanent credit relationships with suppliers. Refresher sessions are organised with Agents and suppliers to foster communication and the generation of lessons learned. Agents have also been used to distribute information or condoms in support of community-based HIV/AIDS initiatives. They are also a potential market for products sold by new and existing local enterprises, including garden groups. Agents are encouraged to carry new crop varieties and implements promoted by SDCRMP agronomy activities.

CARE has also been working in partnership with private sector individuals and companies to improve maize fortification at hammer mill level in an effort to address chronic malnutrition in semi-arid Communal Areas. Existing hammer mills are identified in the target communities, and their interest in providing micro-nutrient fortification services is assessed. Training is provided to operators and adoption of the service is promoted through other activities and programmes. Linkages between hammer mill operators and micro-nutrient suppliers are facilitated; costs are initially subsidised, but phased out as households begin to appreciate and use the service. Where suitable hammer mill services are not available, new private businesses or group initiatives through Enterprise Groups have been developed. Hammer mill operators provide another entry point for health education on nutrition, to help them explain the benefits of fortification services to their clients.

To ensure sustainability of key enterprise development services after CARE exits, EDSPs have been established or improved. EDSPs have been trained to co-ordinate or provide vocational/ technical training, support or develop marketing opportunities, channel financial services to clients, offer micro-leasing of machinery, form new Enterprise Groups, or help invest excess individual savings. Areas of operation are based on selection criteria that account for the number and type of new and existing enterprises, market size, availability of promising service providers, the availability of human resources, etc. After preliminary needs assessment, EDSPs are selected. EDSP capacity-building efforts focus on improving understanding of the demand by enterprises and creating new services or products to meet their needs. As EDSPs operate, lessons learned are documented, culminating in a sustainability strategy that considers the quality of service, financial viability of the EDSPs, and feeds into the scaling-up plan as resources allow.

Finally, in addition to improving the availability of private and public sector services to communities, SDCRMP has also worked directly with community groups and households to develop their ability to access these services. This process is on-going and supports the programme's community-management approach. For the purpose of programme effectiveness and longer-term sustainability CARE assists targeted communities to partner with and/or use existing stakeholders that share common interests and have complementary expertise. The programme strives to establish realistic, mutually beneficial relationships between residents, extension workers, NGOs, and the private sector.



Section 13

SECTION 13

MONITORING AND EVALUATION

OBJECTIVE

To check progress and demonstrate impact of the SDCRMP in a complete, logical and efficient way.

STEPS

1. Develop Monitoring and Evaluation Systems
2. Gather Baseline Information
3. Establish Community-level M&E
4. Monitor Activities and Outputs
5. Evaluate Effects and Impacts
6. Prepare Donor Reports

SUMMARY OF THE PROCESS

Monitoring is the periodic collection of information on progress. It regularly checks if activities and outputs are being achieved. Evaluation is the less frequent process of analysis that makes conclusions about the fulfilment of objectives (effects) and goals (impacts) of the programme. It is an opportunity for reflection and critical thinking about the successes and weaknesses of interventions. Together, the process of monitoring and evaluation (M&E) provides a coherent information system and an opportunity for reflective practice, two critical parts of programme design within CARE's HLS framework.

A focused M&E system is essential, as the amount of information that can be collected is infinite. From the logical framework, an M&E plan is developed. Baseline information is collected before implementation begins, using a variety of tools to capture a pre-programme scenario. Monitoring tools facilitate regular review of work-to-date, and help plan and adjust activities. Evaluations also feed into planning, and allow donors and CARE to improve programme designs. M&E results feed into internal and external (donor) reports.

In developing an M&E system, it is important to remember that quantitative information changes — crop production fluctuates, market conditions change, money values inflate —and often has nothing to do with the programme. In such an external environment, the (usually qualitative) indicators chosen by the community to monitor and evaluate success become the most relevant part of the M&E system. Community M&E systems need to be better understood and improved.

SECTION 13 DETAILED OVERVIEW

Step 1 Develop monitoring and evaluation systems
- Identify M&E staff
- Select appropriate indicators
- Develop M&E plan and schedule
- Conduct necessary M&E training

Step 2 Gather baseline information
- Collect secondary data
- Review feasibility studies/household livelihood assessment
- Design baseline sampling programme
- Design baseline tools
- Collect baseline data
- Prepare an integrated baseline report

Step 3 Establish community-level M&E
- Develop a community M&E plan
- Use participatory monitoring and evaluation tools

Step 4 Monitor activities and outputs

Step 5 Evaluate effects and impacts
- Mid-term evaluation
- End-of-project evaluation
- Impact evaluation

Step 6 Prepare donor reports

DEVELOP MONITORING AND EVALUATION SYSTEMS

Effective M&E requires a plan of action before it can be implemented. The programme design and logical framework are used as the starting point.

IDENTIFY M&E STAFF

For large programmes, a dedicated person is needed if to ensure M&E is done well. The candidate needs to pay attention to detail, be computer friendly, think critically, have good analytical skills, be good with timelines, and not be too senior.

SELECT APPROPRIATE INDICATORS

Indicators are quantitative and qualitative "markers" against which progress and change is measured. The logical framework includes indicators (see Annex 1.2), but these may need to be improved. HLS indicators are chosen to evaluate the overall impact of the programme on a target group or geographical area. Indicators for monitoring objectives (effects) and outputs are more directly related to interventions, and tend to focus on specific sectors. Effect-level indicators measure responses in the target population, while output-level indicators measure the products of the programme. Participants identify community indicators (see Step 3).

Measuring HLS impact involves more than measuring the sum of the separate effects-level changes brought about by interventions. HLS indicators need to show the totality of impacts on household livelihoods and community well-being. CARE International has developed indicators for 8 areas of HLS; for example, food security indicators are:

- *Meals consumed per day*
- *Months of household food provisions*
- *Expenditure on food*
- *Food security coping strategies*

DEVELOP M&E PLAN AND SCHEDULE

Before implementation, CARE programme and M&E staff develop a plan that includes (see example in Annex 1.3): Indicators to be monitored and evaluated, specific data needed to evaluate progress towards these indicators (including the data needed, its source, method of collection, person responsible, and type), and use of the data (including if it will be used for monitoring or evaluation purposes and the frequency of each, the application, and the audience and reporting formats).

Once all M&E activities are identified, a schedule is developed identifying who is responsible for developing tools and their deadline, who is responsible for data collection and analysis, and when data is to be collected.

CONDUCT NECESSARY M&E TRAINING

M&E training is often needed at all levels. Programme managers need training in developing M&E plans, developing tools, and analysing information. Field Officers need training in specific data collection methods (e.g., interviews, focus group discussions, probing, etc.), and ensuring data quality. M&E training should be scheduled as required, not all at once.

GATHER BASELINE INFORMATION

Evaluating effects and impacts is only successful if there is good baseline information against which future evaluations are compared. It is important to plan a baseline study that collects a complete data set for this purpose.

COLLECT SECONDARY DATA

Secondary data are often gathered during programme design (see Section 1). District and provincial information from a variety of sources is tabulated against HLS and other indicators to provide a baseline data set for evaluating long-term impact. Secondary data can be collected by and shared amongst programmes working in the same region.

REVIEW FEASIBILITY STUDIES/HOUSEHOLD LIVELIHOOD ASSESSMENTS

The technical and social feasibility studies completed as part of site selection (see Section 3) and the additional assessments done during initial community mobilisation (see Section 4) provide significant baseline information; for example, the number of households, area under cultivation, extent of siltation, livelihood strategies, institutional support systems, etc.

DESIGN BASELINE SAMPLING PROGRAMME

When the programme involves many communities, only a sample of those communities needs to be included in baseline data collection. The communities chosen should be representative of different locations, constraints, population sizes, physical conditions, etc. Wealth ranking information collected during initial assessments provides baseline information and is also used to select households for baseline data collection activities, to ensure a range of wealth categories is included. Baseline tools sample households in different wealth categories to document changes to different groups within the community (particularly the most vulnerable groups). Non-participants should be included in baseline studies, to provide a comparison for households participating in the programme.

CARE has observed some inconsistencies in the different wealth categories identified in each community, making it difficult to summarise information across all communities. Also, because households self-select which wealth category they belong to, a few households are not classified in the best category. Some of the baseline tools help check for these inconsistencies.

DESIGN BASELINE TOOLS

CARE uses a variety of tools in baseline studies, including:

Quantitative survey: Quantitative surveys are done through random sampling of a number of households at each baseline site to measure specific household parameters related to impact and effect-level indicators. The sample is chosen to include different wealth categories. Data is entered into an analysis program (e.g., SNAP survey analysis, EPI-INFO), and analysed by senior management. Surveys are often designed, implemented and analysed by consultants.

CARE has found that a large quantitative survey that tries to capture all household information at the beginning and end of a project is sometimes too cumbersome. Lessons learned from previous surveys include:

- *Survey design must be simple.*
- *Data on incomes will be inconsistent and subject to changes in the external environment.*
- *The same households must be surveyed each time.*
- *Donors may not be interested in the results of quantitative surveys, but in the more qualitative information collected by other tools.*
- *Survey design, implementation and analysis has time and cost issues.*

Focus group discussions: Focus group discussions are held with different wealth categories to gather more qualitative baseline information. They are more useful for investigating social development issues, such as community-based management, access/use of natural resources, social networks, etc. Participatory techniques are used (e.g., cropping calendars, problem trees). Group size must be kept small (6-10 people).

Sentinel household case studies: A small number of households from different wealth categories (and different degrees of participation in the programme) are chosen as case studies for monitoring and evaluating impact and effect-level indicators. Baseline interviews are done using cluster diagrams to visually represent the household, and information is summarised on data collection forms. This tool allows more in-depth understanding of HLS impacts at the household level than a rigid survey.

Key informant interviews: Where needed, interviews are held with specific community members, extension workers, and other key stakeholders to collect baseline information.

COLLECT BASELINE DATA

As much as possible, baseline data collection is done before the programme has begun. All baseline studies should be done during the same time period. Necessary training sessions can be held as part of this process, and should involve partners.

Data quality needs to be checked by the Programme Manager or M&E staff immediately after data collection, particularly for qualitative data, to ensure data quality. Because of the repetitive nature of collecting baseline data, questions may not be asked or probed because the first answer, or the simple answer, is considered adequate. On-going training is needed.

PREPARE AN INTEGRATED BASELINE REPORT

The baseline report describes conditions in communities and households before interventions. This information is used to (1) describe the range and types of participants; (2) characterise the socio-economic conditions before implementation; (3) design specific interventions to address needs; and, (4) evaluate change (effects and impacts) after CARE exits.

ESTABLISH COMMUNITY-LEVEL M&E

Community-based M&E provides a more realistic way of measuring success and failure, and informs implementation methodologies. Community M&E systems need to be better understood and improved.

DEVELOP A COMMUNITY M&E PLAN

A community-based M&E programme is one where the community chooses indicators they value, designs an M&E plan, collects and analyses information using methods they find appropriate, and makes decisions based on the results. During site selection and initial community mobilisation (see Section 3 and 4), visioning exercises are done to help participants imagine what they would want their community to look like in the near future, particularly given the programme activities. After they have developed this vision, the community can identify the variables they would look at to see if this vision had been achieved. These variables become the community-based indicators of programme success. Taking this a step further, a plan for monitoring and evaluating these indicators can be developed with committees, and meetings held every 6-months to check progress.

In addition to this community evaluation of programme impact, monitoring activities are identified for each technical area of intervention as part of developing long-term systems for community management (see Section 4 to 10). For example, monitoring dam siltation, monitoring work plan progress, seasonal review of garden and dryland production, etc.

USE PARTICIPATORY MONITORING AND EVALUATION TOOLS

Although the community-based M&E system is not very well developed for the SDCRMP, CARE has initiated a number of participatory M&E tools. These tools are developed and promoted by CARE, but involve participation by the community in their implementation. Details are provided throughout Sections 4 to 10; examples include:

Experience from IES suggests that record keeping by individual farmers is difficult, and that some committees do not see the value in keeping records. Using participants to collect records involves them in data collection, but may be collecting information that the community does not consider important.

- Committee minutes.
- Committee records (e.g., financial, participation, visitors, crop production and sales, rainfall, etc.)
- Priority ranking exercises of activities
- Evaluation of new technologies using farmer-defined criteria

MONITOR ACTIVITIES AND OUTPUTS

Various tools are used to monitor activities and outputs regularly. Field Officers are largely responsible for regular monitoring, and report to the Programme Manager.

Monthly reports, meetings and field visits: Field Officers prepare monthly reports on the activities completed at each site, flagging problems. Reports discuss meetings held, progress since last month, targets for next month, and problems encountered. Monthly reports and programme issues are discussed at monthly meetings held with the entire team. Meetings that include field visits to sites provide Field Officers and the Programme Manager with an opportunity to observe what each other is doing.

Monitoring Information System (MIS): The MIS provides a list of all activities and outputs, and Field Officers identify what has been completed during each quarter (see Annex 13.1). The MIS allows managers to quickly monitor progress, and shows what activities still need to be done, helping Field Officers plan their work. The MIS should record the number of participants in each activity over each quarter, so that staff can monitor changes in participation during implementation and not just at the time of joining. In this way, participation problems can be identified, and reasons for non-participation and drop-outs can be investigated.

The MIS should not overwhelm Field Officers —which can be the case if all activities over a 5-year period are included on one form. One option is to develop a master MIS that includes all activities, and then use an annual MIS that only reflects the priorities for that particular year. Information could then be fit into the master MIS on an annual basis.

Training reports: Field Officers prepare training reports summarising training topics covered, number of participants (and gender, wealth category, etc.), an overall evaluation or assessment of training success, and future training needs.

Special reports: Special reports are prepared to report on the progress of activities and outputs, including dam rehabilitation status reports, seasonal reports of research activities, reports summarising conservation measures implemented at each site, survey of current market prices, etc. Quarterly progress reports are prepared by the Programme Manager summarising progress at each site, including planned activities, completed activities, any variance, and narrative explanations. All of these reports feed into planning workshops.

Planning workshops: Planning workshops are held every 6 months. Each output is discussed in terms of progress to date, and staff responsible make presentations. Evaluations of progress are done; for example, looking at the strengths, weaknesses, opportunities, and threats, or reviewing results from special studies or mid-term evaluations. Logistical issues such as procurement, transport, materials, etc. are discussed. Priorities for the next 6 months are identified, based on work completed to date, and Field Officers and APMs prepare 6-month work plans. These work plans are used in staff performance evaluation (see Section 2).

Output-to-purpose review workshops: Some donors require annual review workshops on progress. These reviews provide an opportunity to demonstrate successes and discuss options for addressing weaknesses. Review workshops involve all staff, are done in the field, and include site visits that show a range of activities.

EVALUATE EFFECTS AND IMPACTS

Donors often require evaluations, especially if additional funding is being requested, but CARE is also interested in measuring impacts and effects on the target population, and overall success. Senior management staff are largely responsible for evaluations. To avoid any bias in data collection, external consultants often do evaluations.

MID-TERM EVALUATION

Mid-term evaluations are done half way through the programme life (but no earlier than two years into implementation). These studies focus on evaluating methods and anticipated effects/impacts, with summary observations about outputs to date. Mid-term evaluations can focus on specific components of the programme (e.g., a mid-term evaluation of agronomy interventions). Recommendations are used to prioritise activities before CARE exits.

If sentinel household case studies are used to measure impact on HLS, these households should be visited more frequently than just at baseline and final evaluation. Mid-term (possibly annual) evaluations should be done at these households to monitor any changes.

END-OF-PROJECT EVALUATION

End-of-project evaluations are done after implementation, and sometimes a year or more after CARE has exited communities. These studies evaluate effects and impacts (observed and anticipated), with summary observations about the programme's methodology and outputs. Recommendations are used to design future programmes of similar purpose, or to justify follow-up funding. Evaluations should compare against any baseline survey to determine change. If baseline tools collected relevant and useful information, they should be repeated for the final evaluation to measure effects and impacts. Evaluators may decide to focus on specific issues during these investigations.

Evaluations of the SDCRMP have used a range of techniques, including focused quantitative surveys, community workshops, PRA tools, observations, key information interviews, etc. In general, the evaluators have had little baseline information to work with, which is why a better M&E system has been developed.

IMPACT EVALUATION

A methodology for measuring the impact of the programme has been developed by CARE and Silsoe Research Institute (SRI) (see Annex 13.2). This evaluation allows comparisons to be made across dam sites, comparing direct and indirect costs and benefits.

PREPARE DONOR REPORTS

All donors have different requirements for reporting. The M&E system feeds into these reports, as does information from finance and administration systems. The Programme Manager and ANR Sector Co-ordinator are responsible for completing donor reports.

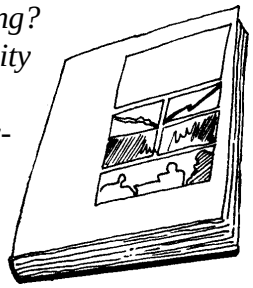
Reports can include:

Programme implementation document: At the beginning of implementation (and reviewed and updated bi-annually), a programme implementation document is prepared. The purpose of the PID is to set out a detailed implementation schedule, update the programme design if necessary, and respond to policy evolution. The PID specifies output targets for implementation very specifically for the year (or shorter) and outlines how they relate to long-term objectives. Preparation of the PID is done by senior management staff, with presentation for review and discussion with all implementing staff.

Quarterly/annual progress reports: Discuss progress toward activities and outputs, often against the logical framework. Problems or constraints are presented, and solutions are suggested. Important information such as results of special surveys, examples of internal systems, etc. is sometimes attached. An overview of the report is provided at the beginning, to summarise the content. Sometimes, meetings are held to present major achievements to date.

Financial reports: The Finance Department prepares quarterly and/or annual financial reports using monthly reconciliations. Budget forecasts are prepared for the remainder of the programme life based on this information.

For further information related to monitoring and evaluation, please see:



- *Barton. Guidelines to Monitoring and Evaluation - How Are We Doing?*
- *CARE International. The Application of Household Livelihood Security Indicators in Baseline Studies*
- *CARE Zimbabwe. Monitoring and Evaluation Plan - Community-based Food Security Project*
- *Harnmeyer. Participatory Review of the Small Dam Rehabilitation for Economic Growth in Communal Lands*
- *Matsaert et al. Small Dam Rehabilitation for Food and Economic Security in Selected Communal Areas of Masvingo Province - Post Project Evaluation*
- *Van Straaten. Community Drought Mitigation Project - Evaluation Report*
- *Van Straaten and Mukwereza. Small Dam Rehabilitation for Economic Growth Among Communities Located in Communal Lands in Chivi District, Masvingo Province - Final Evaluation Report*

Section 13 Annex

Annex 13.1 Example – Excerpts from the Monitoring Information System (MIS)

Community-based Food Security Project
Project M.I.S.

Dam Name/District: _____
SDRP Field Officer: _____

Activity: PARTICIPATION	Info Needed	Work Completed in 2001			
		Jan - March	April - June	July - Sept	Oct - Dec
Participation in SDRP activities					
Average # participants in dam and catchment work	#				
# farmers participating in research	# farmers				
# HH participating in irrigated gardens	# HH				
# HH involved in marketing	# HH				
# of Traditional Leaders participating[1]	#				
Participation of vulnerable groups					
# female HoH participating	#				
Total # female participants	#				
# of orphans	#				
# of young school leavers	#				
Participation problems					
# of drop-outs and reasons	#				
Reasons for drop-outs	describe				
Participation in other activities[2]					
# participants in **IGAs**	#				
(# IGA members also involved in garden)	(#)				
# female participants in IGAs	#				
# participants in **Savings Clubs**	#				
(# Savings Club members also involved in garden)	(#)				
# female participants in Savings Clubs	#				

[1] Traditional leaders include sabhukus, headmen, chiefs, etc.
[2] Details on IGAs on Income Generation MIS sheet

Community-based Food Security Project
Project M.I.S.

Dam Name/District: _____
SDRP Field Officer: _____

Activity: DAM REHABILITATION	Info Needed	Work Completed in 2001			
		Jan - March	April - June	July - Sept	Oct - Dec
Dam rehabilitation work					
Length of trees/shrubs cleared	m				
# anthills destroyed	#				
Physical repairs	describe				
Length of dam wall fencing	m				
Area of stone pitching	m^2				
Area of grass planting	m^2				
Length spillway extended	m				
Height spillway raised	m				
Height dam wall raised	m				
Siltation monitoring					
Community monitoring in place	date				
Type of monitoring system	describe				
Record of siltation	level				
Local rainfall monitoring					
Monthly rainfall record	mm				
Maintenance activities					
Maintenance schedule in place	date				
Dam maintenance being done	Y/N				
Type of maintenance works	describe				
Fishing					
	species				
Amount of fish restocking (species)	kg				
# fish ponds established	#				

Annex 13.2 Example – An impact evaluation of the small dams programme

An Impact assessment of CARE's small dam rehabilitation projects

Contents

Improving livelihoods
Lack of water prevents many households and community based activities in dryland areas. When water becomes available it is put to a wide variety of uses: drinking, washing, food production and processing, brick making etc. Many of these activities have a high economic value and can play an important role in improving household income and through income diversification can avoid over reliance on single production activities such as dryland cropping.

A small dam is a water point that provides water for domestic needs and economically productive purposes. Small dam rehabilitation forms part of CARE's strategy to alleviate poverty and improve the livelihoods of individual households living in the vicinity of these dams. Each dam is community-owned and managed serving clearly defined user groups within the local community. These are both regular users, being those that use the dam primarily for irrigation and irregular users that use the dam for livestock watering during the dry season or drought periods. Small dam rehabilitation forms part of CARE's own livelihood strategy.

Improvements in livelihoods resulting from the rehabilitation (Annex2) are primarily derived from an increase in garden production under irrigation, mainly vegetables, which used for both home consumption and sale. Other dam uses include livestock watering, fishing, and brick making. In order to assess the impact of the small dam rehabilitation benefits (or advantages) and costs (or disadvantages) need to be identified and quantified. These include financial and non-financial ones, for both beneficiaries and CARE. Some can be easily identified and valued in financial or economic terms, whilst others are more difficult to identify or quantify.

Costs (or investments)
Both CARE and communities have made a number of investments in increasing community resources (or capitals). These include investments in improving:

Physical capital
Each dam has a number of inter-linked physical components requiring development of physical capital. This includes:
- Dam rehabilitation, which involves repairing or raising the dam wall, or raising or repairing the dam spillway.
- Fencing the micro-catchment, being the area immediately surrounding each dam.
- Irrigation and garden development which includes fencing the irrigated area, water-conveyancing and storage, toilet construction, conservation works and gully reclamation in the irrigated area.
- Construction of livestock watering points, usually below the dam, adjacent to the irrigated area.
- Construction of shallow wells below the dam for drawing potable drinking water.

Natural capital
Protection of initially the geographical catchment through a process of participatory catchment planning and management, which seeks to conserve and improve the management of both individual and common property resources within the catchment. This comprises:
- On individual property: establishing run-off orchards, improved dryland cropping, soil conservation works and small woodlots.
- On common property, usually grazing areas: gully reclamation, silt traps (stone or vegetative), grazing management and establishment of woodlots.

Social and human capital
To support investments in physical and natural capital CARE has provided funds for environmental awareness training, facilitating farmer exchange visits and focus group discussions, as well as training sessions with each community that has increased their knowledge, technical and management skills. This has been designed to increase local communities' social and human capital. It has led to greater empowerment and social cohesion. It has helped to strengthen local institutions, specifically those that have enabled the project to proceed. This has included not only dam, irrigation and agronomy or conservation committees, but others that have been established as a result of increased incomes and training. This has included savings clubs, credit groups, poultry clubs, sewing clubs and even socially orientated institutions such as football clubs

All these require an initial investment over a three-year period and thereafter require on-going maintenance.

Benefits

Number and classification of beneficiaries
All dam sites distinguish between regular and irregular users. Irregular users are those that use the dam during the dry season only mainly for livestock watering, brick making, and fishing. Regular users use the dam throughout the year and tend to live within a 3-5 km radius of the dam. They use the dam for irrigation, livestock watering, brick making, fishing and sometimes domestic purposes (laundry, bathing etc.). The numbers of user homesteads and their classification are shown below:

Table: Numbers of user households and their classification

User household (main use)	**Gwitima**		**Average (all dams)**	
	Households	*People*[1]	*Households*	*People*
Regular (all year, irrigation)	104	925		
Seasonal (dry season, livestock	70	623		
Total	**174**	**1548**		

[1]The average household size for Gwitima is 8.9

Access to project benefits
Communities and their committees have generally decided that households wishing to participate in the irrigation gardening activities must participate in rehabilitation of the dam and the catchment area and pay a joining fee of $30, thereafter a user fee of $10 per month. This required each household providing one adult to work three days a week undertaking the work required (fencing, conservation work and spillway raising). Households not taking part in these activities are allowed to use the dam for livestock, but access for fishing, brick making is controlled according to local rules or bye-laws approved by the sabhuku, although at times these rules are difficult to enforce.

For gardening the rules can be enforced and some regular users of the dam may not be able to participate for a number of reasons, such as: cannot afford joining fee, old age, lack of time due to being a single parent or looking after sick family member.

Although women are the main participants in terms of project gardens, men and women (and children) benefit equally. Poor people are them main beneficiaries but there is some concern about community designed rules that may prevent the poorest from joining,

Perceived impact
The community discussions on project benefits have identified a range of benefits, including:
- Increased food, food security and improved nutrition
- Income from sale of vegetables and use of cash for education, purchasing household goods, joining savings (revolving credit) clubs and starting new projects (especially sewing, poultry).
- Improved living conditions
- Income from sales of fish, poles and bricks
- Water for livestock.
- Improved community organisation, mobilisation and motivation.
- Applying knowledge gained in the gardens to dryland farming
- Soil conservation new skills.

The most important benefits were however
- Vegetable gardens for home consumption and sale
- Having cash to start new projects
- Having the security of water nearby

These investments have also resulted in an increase in *financial capital* though increased sales, improved access to credit and other farming inputs and improved marketing.

Summary of costs and benefits
These component factors are illustrated in the attached figure and table.

Table 1. Impact of small dam rehabilitation

IMPACT	QUANTIFICATION
Investment costs	
Physical capital	
➢ Dam rehabilitation ➢ Fencing micro-catchment ➢ Irrigation development, fencing, toilets, conservation works, fish ponds ➢ Cattle watering points ➢ Shallow well construction	*All these incur materials, tools, transport, community labour, Government staff travel and subsistence as well as CARE facilitation costs. These have been derived from* ➢ CARE records ➢ Community estimates of their labour input
Natural capital	
➢ Catchment protection and production - Individual property (run-off orchards, conservation, woodlots) - Common property (grazing management, conservation, woodlots	
Development of human and social capital	
➢ Training ➢ Farmer to farmer visits and focus group discussions ➢ Participatory catchment planning	
Benefits	
Improved livelihoods	
Direct benefits	*Productivity increase*
From the dam	*Although CARE does have some records on some of these, most have been derived from discussion with the community and comprise*
➢ Increase in garden production ➢ Fish caught in the dam ➢ Improved livestock watering facilities	
From non dam activities	➢ Increase in yields and their value less any increase or decrease in costs of production. ➢ Value of additional fodder, wood, fruit etc. less any increase in labour for their production.
➢ Increase in food processing ➢ Increase in dryland crop production ➢ Increased fruit production ➢ Increased firewood and building materials ➢ Increased livestock fodder ➢ Establishment of community and individual poultry projects. ➢ Establishment of bee keeping ventures. ➢ Establishment of sewing ventures.	
Indirect benefits	
➢ Increased household food security. ➢ Improved health and nutrition	
Improved natural resources	
Indirect benefits	
➢ Reduced soil erosion and hence increase in dam life ➢ Sediment trapped in conservation structures ➢ Less work in repairing storm damage ➢ Increased soil moisture ➢ Improved soil fertility ➢ Improved environment	*These are ultimately measured as a sustained increase in productivity through* ➢ Increased life of the dam (in the case of the gardens) ➢ Increases in dryland production
Improved social and human capital	*These are ultimately measured as a sustained increase in productivity with all resource groups benefiting.*
Indirect benefits	
➢ Improved leadership, institutions, conflict management skills. More cohesive community ➢ Improved management, technical and financial skills ➢ Decreased vulnerability, especially of the poorest	
Improved financial capital	
➢ Improved access to inputs, credit and marketing ➢ Savings clubs, marketing groups	Measured through an increase in productivity

Evaluation methodology

Cost-benefit analysis

The impact assessment of the project poses problems largely due to the difficulties in obtaining meaningful data on the wide range of variables that need to be assessed (Bojo, 1991; Harrington, 1993; Lutz *et al.*, 1994, de Graff, 1996 and Clerk, 1997). Cost-benefit analysis (CBA) does provide a framework for discussing, collecting, presenting and analysing information. It is a common tool for both project appraisal and impact assessment and is designed to assist in choosing alternative courses of action and allocating scarce resources (Gittinger, 1984). It lends itself to developing into an iterative participatory process whereby stakeholders can assist in the definition of options and their likely impacts. Costs and benefits must be quantified over a period of time, which can then be discounted to determine net present values (NPVs), internal rates of return (IRRs) and Benefit: Cost ratios (B: C ratios). The advantages of using this method are:

- All costs and benefits must be identified and quantified.
- The project needs to be considered over an appropriate time horizon (say 20 years).
- It takes into account the time value of money, through the use of an appropriate discount rate.
- Those elements having greatest impact on the costs and benefits can be subjected to a sensitivity analysis.

However the most critical question is not the costs incurred, as they are easily measurable, but rather, whether the long-term benefits, make the initial costs worthwhile. Assessing the impact of the project requires the productivity increase to be assessed with and without the project. The difference between the two represents the benefits of the project.

Quantification of project costs

These have been determined in two ways:

- From CARE's accounting records. This has provided actual costs on materials and tools supplied by CARE on a per dam basis. It has also provided details of any consultancy costs for individual dam assessment and rehabilitation and design. Costs of CARE facilitation, Government staff travel and subsistence have not been allocated on a per dam basis and represent an average across all dams.
- Through discussions with the local community. Communities have not kept detailed records either of their own expenditure, their own labour or other resources used (draught animals for instance). These have been derived through discussions with each community. All labour whether hired or family supplied has been valued at the cost of hired labour.

Quantification of project benefits

For direct benefits, increases in productivity (from the dam) have been determined through scrutiny of community records where they exist, but more reliance has been given to information derived from discussion with local communities and key informants working with the community. The same principal has been applied to benefits arising from non-dam sources, but use also has been made of data derived from the base-line survey (for dryland crop production). No value has been attributed to indirect benefits as these are all designed to improve livelihoods through increased productivity albeit in the in the longer term. Off-site benefits, such as the downstream effects of reduced soil erosion, improved fishing and improved water quality have been omitted from the analysis.

Allowing for inflation

All values have been measured at present day values (2000). All costs have been measured in Z$, converting to US$ at the mean exchange rate for that year.

Discount rates and time horizons

In order to make costs and benefits comparable, future cash flows have been discounted to their net present value. The discount rate used has a strong influence on the relative attractiveness of different alternatives. Resource poor households typically confront high discount rates (Harrington, 1993) reducing their ability to make investments with long term payoffs. Although discount rates should represent farmer's time preference rates, this varies between individuals and is subjective but estimated to be over 25%, when the beneficiaries households are extremely poor (Ellis-Jones and Sims, 1995). The NPV is extremely sensitive to discount rate, with lower rates making the project more attractive.

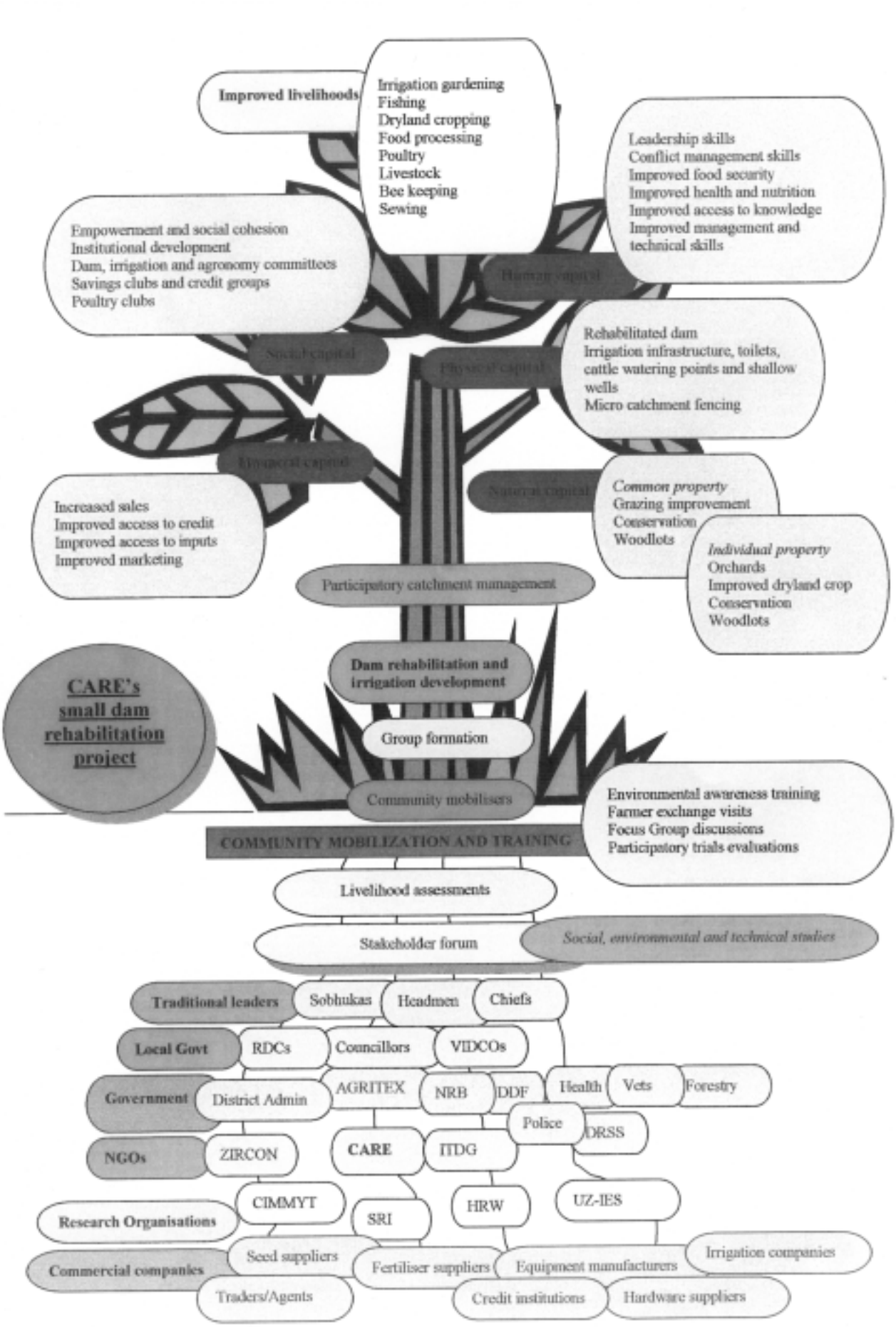
Sensitivity analysis

The main factors affecting the impact are the increased productivity with the project and discount rates used in determining NPVs. Four increases of productivity (5%, 10%, 20%, and 30%) and two discount rates (5% and 20%) have been used in the sensitivity analysis.

Impact assessment of small dam rehabilitation (Economic Appraisal)							Updated	7-Dec-00		GWITIMA DAM, CHIVI DISTRICT, MASVINGO PROVINCE								
		Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	20
Description	Calculation	Unit	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2017
COSTS																		
Investment costs																		
CARE facilitation	322770		16900	16900	12600	12600												
Material costs-CARE	109086		43634	43634	10909	10909												
Community contribution	1772160		443040	443040	443040	443040												
Specialist support																		
Sub total	*2204016*		*505574*	*505574*	*466549*	*466549*												
Maintenance costs																		
Material costs	5%	of materials	0	0	0	0	5454	5454	5454	5454	5454	5454	5454	5454	5454	5454	5454	5454
Labour costs	10%	of investment	0	0	0	0	177216	177216	177216	177216	177216	177216	177216	177216	177216	177216	177216	177216
Sub-total			*0*	*505574*	*466549*	*466549*	*182670*	*182670*	*182670*	*182670*	*182670*	*182670*	*182670*	*182670*	*182670*	*182670*	*182670*	*182670*
Total costs			505574	1011149	933097	933097	182670	182670	182670	182670	182670	182670	182670	182670	182670	182670	182670	182670
BENEFITS																		
Irrigated garden																		
Area of garden (gross)	ha	siltation rate	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Water availability	% capacity	2%	70%	66%	64%	62%	60%	58%	56%	54%	52%	50%	48%	46%	44%	42%	40%	30%
Area irrigated	ha		1.00	2.00	2.00	1.94	1.88	1.81	1.75	1.69	1.63	1.56	1.50	1.44	1.38	1.31	1.25	0.94
Income from gardens	Cash Sales		129038	258076	516152	500022	483893	467763	451633	435503	419374	403244	387114	370984	354855	338725	322595	241946
	Consumed		96642	193284	386568	374488	362409	350327	338247	326167	314087	302006	289926	277846	265766	253685	241605	181204
Sub total			*225680*	*451360*	*902720*	*874510*	*846300*	*818090*	*789880*	*761670*	*733460*	*705250*	*677040*	*648830*	*620620*	*592410*	*564200*	*423150*
Gardening costs																		
Purchased materials			799	1597	3194	3094	2994	2895	2795	2695	2595	2495	2396	2296	2196	2096	1996	1497
Labour			49,728	99456.33333	198913	192697	186481	180266	174049	167833	161617	155401	149185	142968	136752	130536	124320	93240
Sub - Total			*50527*	*101053*	*202107*	*195791*	*189475*	*183159*	*176843*	*170528*	*164212*	*157896*	*151580*	*145264*	*138948*	*132633*	*126317*	*94737*
Benefit from irrigated gardens			175153	350307	700613	678719	656825	634931	613037	591143	569248	547354	525460	503566	481672	459778	437883	328413
Less garden production without project																		
Income less costs			11850	11850	11850	11850	11850	11850	11850	11850	11850	11850	11850	11850	11850	11850	11850	11850
Net benefit from gardens		100%	163303	338457	688763	666869	644975	623081	601187	579293	557398	535504	513610	491716	469822	447928	426033	316563
Other production benefits																		
Fish																		
Improved livestock watering			0	16875	33750	67500	67500	67500	67500	67500	67500	67500	67500	67500	67500	67500	67500	67500
Improved dryland farming			0	9264	18528	18528	18528	18528	18528	18528	18528	18528	18528	18528	18528	18528	18528	18528
Food processing																		
Fruit from private orchards			-255	-120	42380	56547	84880	169880	169880	169880	169880	169880	169880	169880	169880	169880	169880	169880
CPR trees and grasses			0	17700	35400	70800	70800	70800	70800	70800	70800	70800	70800	70800	70800	70800	70800	70800
Fodder from private lands																		
Poultry			0	0	8400	16800	16800	16800	16800	16800	16800	16800	16800	16800	16800	16800	16800	16800
Sub-total			*-255*	*43719*	*138458*	*230175*	*258508*	*343508*	*343508*	*343508*	*343508*	*343508*	*343508*	*343508*	*343508*	*343508*	*343508*	*343508*
Indirect benefits																		
Increased food security			0	14300	28600	57200	57200	57200	57200	57200	57200	57200	57200	57200	57200	57200	57200	57200
Improved nutrition/health			0	0	104000	208000	208000	208000	208000	208000	208000	208000	208000	208000	208000	208000	208000	208000
Sub-total			*0*	*14300*	*132600*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*	*265200*
Total Benefits Z$			163048	396476	959821	1162244	1168683	1231789	1209895	1188000	1166106	1144212	1122318	1100424	1078530	1056635	1034741	925270
Benfits less costs Z$			-342526	-614673	26724	229147	986013	1049118	1027224	1005330	983436	961542	939648	917753	895859	873965	852071	742680
Exchange rate Z$=US$			36	38	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Benefits less costs US $			-9706	-16176	534	4583	19720	20982	20544	20107	19669	19231	18793	18355	17917	17479	17041	14852

	Per Capita Cost Analysis		Z$	US $
1	Population - direct beneficiaries	925		
2	Population - indirect benficiaries	2225		
3	Population - total	3150		
4	Total project outlay		3976176	79524
5	Total community- outlay		1772160	35443
6	Total CARE -outlay		2204016	44080
7	Per capita cost (direct beneficiaries)- Total		4299	86
8	Per capita cost -(all beneficiaries)- Total		1262	25
9	Per-capita cost -CARE outlay (direct beneficiaries)		2383	48
10	Per-capita cost -CARE outlay (all beneficiaries)		700	14
	Exchange rate	1	50	

Economic Analysis	
Discount rate	12%
NPV (US $)	65,512
IRR	38%
Benefit:cost ratio	2.07
Main assumptions	
Siltation rate	2%
Productivity	100%


Improved livelihoods
Irrigation gardening
Fishing
Dryland cropping
Food processing
Poultry
Livestock
Bee keeping
Sewing
Leadership skills
Conflict management skills
Improved food security
Improved health and nutrition
Improved access to knowledge
Improved management and technical skills
Empowerment and social cohesion
Institutional development
Dam, irrigation and agronomy committees
Savings clubs and credit groups
Poultry clubs
Human capital
Social capital
Physical capital
Rehabilitated dam
Irrigation infrastructure, toilets, cattle watering points and shallow wells
Micro catchment fencing
Financial capital
Natural capital
Increased sales
Improved access to credit
Improved access to inputs
Improved marketing
Common property
Grazing improvement
Conservation
Woodlots
Individual property
Orchards
Improved dryland crop
Conservation
Woodlots
Participatory catchment management
CARE's small dam rehabilitation project
Dam rehabilitation and irrigation development
Group formation
Community mobilisers
Environmental awareness training
Farmer exchange visits
Focus Group discussions
Participatory trials evaluations
COMMUNITY MOBILIZATION AND TRAINING
Livelihood assessments
Stakeholder forum
Social, environmental and technical studies
Traditional leaders
Sobhukas
Headmen
Chiefs
Local Govt
RDCs
Councillors
VIDCOs
Government
District Admin
AGRITEX
NRB
DDF
Health
Vets
Forestry
Police
DRSS
NGOs
ZIRCON
CARE
ITDG
CIMMYT
SRI
HRW
UZ-IES
Research Organisations
Commercial companies
Seed suppliers
Fertiliser suppliers
Equipment manufacturers
Irrigation companies
Traders/Agents
Credit institutions
Hardware suppliers


Notes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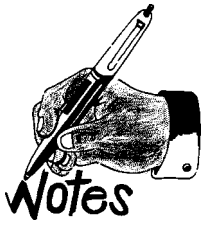
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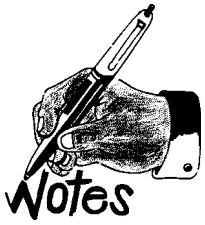
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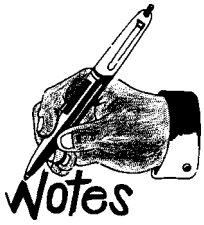
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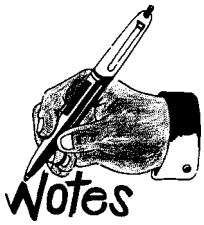
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