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DAAD Alumni Summer School

Integrated Watershed Management
Financial Aspects of Watershed Management

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1.1 Introduction

Integrated Watershed Management (IWM) requires the understanding of all segments of the stakeholders and beneficiaries of the functions, potential, threats and benefits of watersheds so as to be able to develop a common watershed management strategy. This concept is relatively new in many countries including those in East Africa. The limited available information on watershed management in East Africa indicates that much has to be done to ensure their sustainability. Another typical case is that of the Great Ruaha in south western Tanzania, where water discharge to the Indian Ocean ceased within less than 10 years of upper watershed mismanagement, while efforts to restore the watershed have taken nearly 20 years and a permanent flow is yet to be achieved. The delay is attributed to the failure of organizing the stakeholders to have the same understanding and a common strategy. Summer school trainings such as this one provide an opportunity for harmonised thinking of the key players and joint planning for sustainable watershed management. They also offer a unique cost-effective approach for creating awareness on watershed management. Practical training on financial aspects of IWM is not well covered at university level in East Africa.

1.2 Objectives of the Summer School

The DAAD Alumni summer school contributes to the development of concepts for sustainable financing of IWM. The concepts developed will serve as a basis for ongoing studies and for the evaluation of financial aspects of rural area management plans. Sustainable IWM requires assured financial means as well as appropriate management options. Resources and financial backing in East Africa are not reliable. Moreover, due to a low level of awareness regarding the value of natural resources, management policies such as for the catchment areas are not well implemented at the local and regional levels. Tools for evaluating the financial value of natural resources are not adequately understood. As a result, priority is mainly given to highly profitable resource exploitation rather than to initiatives aimed at sustainable resource utilisation and conservation. However, integrated management of resources including water aims at improving income for smallholder farming activities. Realisation by the local communities of a

positive direct effect from IWM interventions on their livelihood will promote a higher acceptance for resource conservation.

1.3 Geographical Settings of Kiladeda Sub-Catchment

Administrative Units and Population

The Kiladeda sub-catchment is located in the north western part of the Pangani Basin, Tanzania, which lies between latitudes 3° 00' and 3° 30' south of the equator and between longitudes 36° 30' and 37° 15' east of Greenwich (Figure 1.1). The Kiladeda sub-catchment covers an area of about 20 $km^{2\prime}$ and is characterized by steep slope valleys to gentle slopes, lowlands and in a few areas rolling topography. The altitude ranges between 840 metres and 1,060 metres above sea level.

Figure 1.1: Pangani Basin area

The Kiladeda sub-catchment contains three administrative councils with two districts. The population is around 7800 people (2002 population census). Most of the people live in the lowlands and depend directly or indirectly on agriculture

for their livelihood.

Physiography and Drainage

1. **Drainage**

   The Kiladeda River is one of the many tributaries of Weruweru River in Pangani Basin. All water in the sub-catchment drains towards southwest through Kiladeda River (Figure 1.2). The river is fed by numerous underground springs and catchment runoff during the wet season. The average flow rates are approximately 400l/sec.

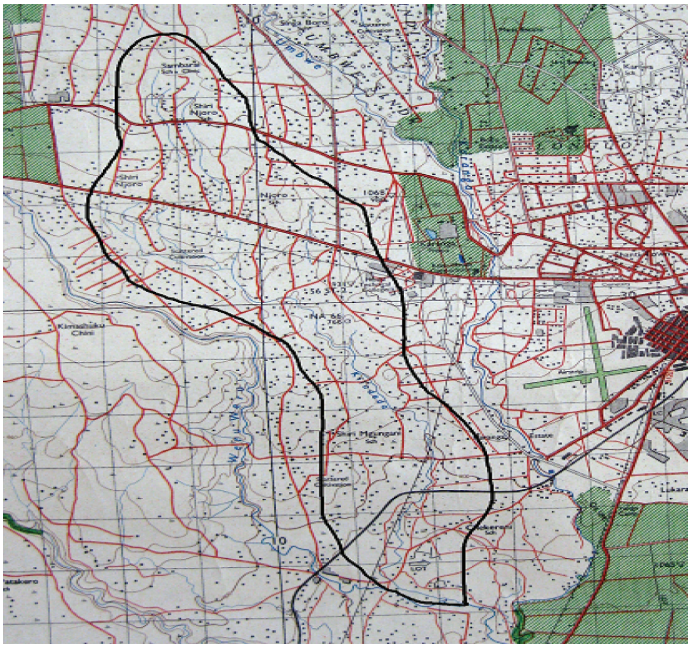

Figure 1.2: Kiladeda drainage system

2. **Climate**

   Most of the hydrological condition of the sub-catchment is affected by the location of Inter Tropical Convergence, which determines the duration and the time of the rainy season and subsequently the dry season. Since the sub-catchment is situated in the southern hemisphere, the lowest temperature of 14° C-18° C occurs during July to August and the highest temperature of 32° C-35° C appears during January to February. The area experiences bimodal rainfall divided into short rains lasting from October to November and long rains which span between mid-March through mid-May or June, as large variations are sometimes experienced causing rainfall unreliability. On average the sub-catchment receives less than 1000 mm/year.

3. **Geology and Soils**

   The Pangani Basin comprises of three geological units, namely the Precambrian basement complex, Neogene volcanics and sediments. On the geological chronology, the Precambrian complex is assigned to the Usagaran system and comprises of high grade metamorphic rocks essentially granulites, gneisses and amphibolites of different compositions. Large part of the sub-catchment falls under the Neogene volcanics of Mount Kilimanjaro.

4. **Socio-Economic Activities**

   Kiladeda River is used for a number of activities by the local people ranging from domestic, livestock and irrigation purposes. Landownership is under trust land. This allows farmers to claim permanent ownership. The main socio-economic activity is farming at subsistence level. A variety of food crops are grown including maize, beans, bananas, vegetables and different types of fruits. Market-gardening of fruits and vegetables are carried out to supplement households' income. Commercial farming involves growing of horticultural crops like cucumber, ground nuts, water melons, tomatoes, car-

rots and sunflower. Livestock rearing includes dairy and beef cattle, sheep and goats, poultry and pigs.
The main source of energy is firewood for domestic purposes. Sawdust stoves designed for energy saving are quite popular especially with the elite residents. Charcoal is in use but purchased from outside the sub-catchment. A few homes have been connected to the electricity network and solar energy installation for lighting purposes has been gaining popularity among a number of households, though there is also over reliance on paraffin.

Kiladeda sub-catchment has generally high potential for rain fed agriculture as the entire area receives bimodal rain that comes in March-May (Long rains) and October-November (Short rains). Irrigation mainly through furrows is carried out to substitute, especially when rains fail or are inadequate for agricultural activities. The initial furrow work started around 1948 after communities settled in the area from the upper slopes of Mount Kilimanjaro. Since then the number of furrows has been increasing. At present there are 10 furrows. This type of irrigation method where open furrows are used results to a lot of wastage of water through infiltration and evaporation. In addition, water in the river is not evenly distributed in space and time. The upstream normally has more water than the downstream sections. Some points in the downstream sections of the river are completely dry especially during the dry seasons. This has given rise to water use conflicts forcing farmers to form committees in order to coordinate and regulate furrow water usage. Water for domestic use is not directly from the furrows. It is supplied through a piping system installed by Moshi Urban Water Supply serving households directly as well as water kiosks, where people buy water at a rate of 10 Tanzania Shillings (TSh) per 20 l.
Pollution concerns were noticed in various parts of the sub-catchment through washing of clothes and other domestic items directly from

the furrows. There is also livestock drinking and washing of farm produce directly withdrawn from the furrows and rivers. Water pollution from agrochemicals is also an issue common in the sub-catchment. Another area of concern is the lack of adequate soil control methods in the slopes adjacent to the furrows and rivers. This increases the rate of siltation hence adding on maintenance costs of the furrows.

1.4 Integrated Watershed Management

Managing watersheds or catchments is a process, which requires integrated concepts, skills and planning. This is pursued as an ongoing process demanding regular monitoring and evaluation for sustainable utilisation of natural resources. Success in integrated watershed management (IWM) depends on participation of stakeholders and empowerment of local institutions with autonomy at the catchment level to balance demand for water resources.
A watershed is an area of land that sheds water to a lake or river, thus describes a hydrological catchment area. It is a logical approach to divide landscapes into most appropriate analytical and management units for water quality improvement. Within watersheds everyone relies on the same water sources and other natural resources. Thus the first step in protecting these resources and guaranteeing their sustainable utilisation is to understand these interdependencies within a watershed. The watershed is a dynamic and complex web of resources - soil, water, air, vegetation, animals and human beings. Its features depend on its size, boundary, terrain, and soil type. Everyday activities within the watershed can impact these resources, ultimately impacting human well-being and economic livelihood. Thus, to fully comprehend a watershed, one needs to consider land uses and trends as well as natural resources utilisation. Cities, homesteads, roads and factories modify the watershed and affect its natural resources. Activities such as farming, livestock grazing, mining, construction, and forestry can also significantly affect a watershed and its water availability.

These in turn lead to significant changes in land use patterns that directly influence the quality of water and air, soil stability, wildlife, property values and other natural resources.

In spite of their environmental, economic and socio-cultural importance, most watersheds' natural resource base has been depleted. As a result, poverty and environmental degradation are widespread; especially upland rural communities in developing countries of Eastern Africa are affected. Lack of opportunities for social development lead to the unsustainable exploitation of natural resources and result in top-down interventions and the further misuse of resources. Significant contributing factors to this vicious cycle include:

- The fragility of upland ecosystems
- Inappropriate farming techniques
- Population growth leading to arable land shortage and low agricultural yields
- Disadvantaged market conditions and limited job opportunities
- A lack of infrastructure and services
- A lack of political influence
- Top-down conservation policies

The most critical resources in any watershed are water, land and soil. These need to be nurtured and sustainably maintained. If water, land and soil resources are managed appropriately, rain-fed agricultural areas can be as productive as irrigated areas. On the other hand, if water resources are not sustainably managed, even with good rainfall, soils are degraded and drinking water becomes unsatisfactory. These causal pathways are witnessed at many sites in Sub-Saharan Africa.
Since watershed management is a process with people in the watershed as

chief functionaries with the most decisive power, stakeholders need to be involved in the planning and implementation process for IWM. A sound local economy is important and ways to sustain or improve it through successful watershed management are crucial. Effective watershed management planning relies on an efficient partnership that includes representatives of all stakeholders that work cooperatively toward a common goal. Conflicts among partners can however influence the efficiency and fairness of the management plan.

IWM requires a plan, an Integrated Watershed Management Plan (IWMP), which is a compilation of many studies conducted within a watershed in a participatory way, including geologic and wetland surveys, socio-economic studies, well water level monitoring, stream gauge data collection, water quality chemistry, bio-assessment surveys, stream corridor evaluations, and Geographic Information System (GIS) database development. The overall goal of the DAAD Summer Schools 2005, 2006, and 2007 was to formulate a management plan that sustains water resources through utilization of best management practices and to highlight those critical issues in the watershed that require planning and management for IWM. As outlined by Warren (1998) this involves:

- Get to know the watershed (determine size, boundaries, soils, terrain, etc.; understand people, interests, institutions; and determine use of the watershed).
- Build local partnerships (identify and contact stakeholders; divide work and responsibility, identify and manage conflicts; obtain local funds and other resources)
- Determine priorities for action (assemble maps and data; identify and document problems; determine goals and objectives; evaluate water quality; assess land use; select critical areas for attention)
- Conduct educational programs (identify and understand target audiences; develop specific messages combining communication ap-

proaches; channels and media)

- Provide landowners with assistance (target technical assistance; provide financial assistance; build social support and recognition)
- Ensure implementation and follow-up (continue with monitoring and evaluation, provide continued local funding; continue to inform and involve everyone)

(Quotation from DAAD Alumni Summer School 2005, Siegen, ISBN 3-932604-18-0)

1.5 Concepts and Sources of Financing

There are internal and external sources of financing for IWM projects and programmes. Internal sources of financing are for instance WRUA member fees or water consumption fees (see section 4.1 for details). External sources could be credits from banks and microfinance institutions (MFIs) or grants/loans from the donor community. This section focuses on external sources. The following gives a short introduction into selected concepts for IWM financing, namely rural finance (local/private level) as well as direct donor finance and water funds (regional/public level).

Rural Finance

Rural finance aims at **providing financial services for economically active people living in rural areas**. In other words, the access of rural communities to efficient and sustainable financial services (such as loans, savings, insurance, or money transfer) should be improved. One major aspect of rural finance is **agricultural finance**, providing financial services to the agriculture industry.
Typical demanders of rural finance are farmers, small scale producers, agriculture-related enterprises (e.g. processors, distributors, and exporters),

non-agricultural businesses (e.g. stores/shops), and private households. Typical providers of rural finance are banks, Micro Finance Institutions (MFIs), credit unions, or informal lenders (such as savings and credit associations, friends, and relatives).
Rural finance **includes all stakeholders of the processing value chain**. Agriculture loans for instance include harvest loans, livestock loans, and farm improvement loans. Loans for non-farming activities can be investment loans that enable transport companies to purchase a truck for taking products from farms to markets/customers. Additionally, since agriculture is a seasonal business, banks and MFIs offer loans and saving products for **private consumption smoothing**. According to the production cycle, farmers generate income on an irregularly basis. In order to match regular monthly expenditures, there is a need to save money and/or to take credit which will for example be repaid after the next harvest.

The loan interest rates in rural finance attract higher risk premium than in urban finance. This results from **the higher costs and risks** that banks/MFIs have to cover. Costs for the loan provider are driven by the long distances to serve a widespread clientele (high information/transaction costs due to limited bank branch networks), small loan amounts for a relatively high administration effort, and difficulties in information procurement (limited written documentation, complexity of income generation, seasonality of agriculture cycle). Higher risks in the agriculture sector for instance result from lack of collateral, lack of diversification, lack of the farmer's risk management, unknown pricing developments, and changes in climate/weather.
One example could be the connection to the water infrastructure[1]. On the water supply side, micro loans can be given to small-scale providers, thereby enabling them to buy water storage facilities or build small water

[1]There are three preconditions for this example: First, there is water pricing mechanism in place. Second, the provider generates a profit out of water fees/tariffs. Not only operation and maintenance costs have to be covered by affordable consumption fees, but also the loan interest rate. Third, the water consumer has to have collateral or a source of income to pay back the loan taken for connection to the water network.

networks. On the water demand side, micro loan to individuals or communities (e.g. to farmers using irrigation) can enable them to finance access to the piped water supply system. (Please see section 4.1.3 for more detailed information about microfinance).

Donor Finance

National and local donor-finance supports (rural) water supply projects directly. It is **one of the most important sources of finance** for smaller IWM investments. There are plenty of organisations providing funds for various different activities. However, each donor has its specialised field of financing. It is therefore very important **to target the request for funding (the proposal) directly at the donors' major field of activity**. (Please see section 3.6 and 4.2 for information about proposal writing and targeting).
Potential donors for directly financing small scale projects are Community Based Organisations, Faith Based Organisations, Community Development Funds, Local Authority Trust Funds, Cooperative Societies, and Non-Government Organisations. (Please see section 4.4 for details about the donors' priority funding areas in selected countries).
On the contrary, international donor institutions such as the German Development Bank (KfW), German technical Cooperation (GTZ), and the World Bank often focus on large-scale infrastructure investments or government advice. Their internal policies often do not consider direct proposals from local community organisations. Additionally, in most cases proposals have to be submitted through governmental bodies. It might therefore be difficult for community organisations such as water (resources) user associations to directly apply for funds for small scale projects.

Water Funds

Various institutions mobilise and allocate financial resources for water

sector development. They provide direct **capital investments** for sustainable water sector development, thereby improving the general and the water-related investment environment. Funds are primarily treated as non-reimbursable **grants**, often refinanced by governments and the (inter-)national donor community. The following gives a short introduction to two water funds, the African Water Facility (international) and the Water Services Trust Fund (Kenya).

- **The African Water Facility**[2], hosted and managed by the African Development Bank, focuses its operational support on four areas:
- Strengthening the water governance (based on IWRM principles),
- Investments to meet water needs (**water supply and sanitation, water for productive uses such as irrigation**, industry, energy, transport, and multi-purposes uses,
- Strengthening the financial base: Support in improving the environment for sustainable financing (increasing public, private sector and donor involvement), improvement of cost recovery and pricing policies (**promotion of sound resource management, more effective resource use, and long-term sustainability**), mobilise domestic government financing, and attracting private sector investments, and
- Improving water knowledge e.g. trainings, capacity building.

Financing is provided from EUR 50,000 to EUR 5,000,000 as **non-reimbursable grants**[3]. Eligible recipients are central/local governments, municipalities, NGOs, civil society organisations, community based organisations, and regional/sectoral organisations (e.g. river basin organisations). Project eligibility includes for instance country commitment to water sector, **ownership/participation of the recipient**, consideration of environmental/social

[2]The operational procedures of the African Water Facility as well as a guideline for applications can be found under http://www.africanwaterfacility.org.

[3]Future introduction of loans and appropriate repayment terms is possible.

impact, as well as clear success indicators and defined targets. Proposals have to be supported by a letter of the national government (ministerial level), and can be sent directly by the applicant.
The **Water Services Trust Fund in Kenya (WSTF)** finances water programmes and projects. On programme level, WSTF is used to channel financing from the WRMA to WRUAs in order to carry out water resource management related activities in their areas. On project level, WSTF **facilitates targeted communities that are underserved to successfully apply for financing**, implement and sustainably manage their quality water and sanitation services[4].

[4]Please see http://www.wstfkenya.org for more information and numerous project examples.

2 Methodology

2.1 Expectation Analysis

The Summer School comprises of participants from different backgrounds. Participants were asked to formulate their expectations towards the outcome of the summer school by writing them on cards to create a common understanding and an open discussion forum for all. Rules to fill the cards were given as follows: to formulate one idea per card, to write a maximum of three lines and to use capital letters. All expectations were read out, grouped by the plenary and a header has been formulated.

Finance concepts

- Sustainable WUA financing
- Learn more about financial aspects on IWM for WRUAt's
- How to finance WRUAt's sustainable for IWM
- Knowledge exchange and fruitful discussions on financial aspects of IWM
- Be better placed in handling/planning watershed finances
- Criteria that must be observed when financing watersheds
- Financial aspects and concepts clear
- Some knowledge on financial aspects and IWM
- IWM and its financial implication
- Making a comprehensive WRUA budget
- Develop financial plan on IWM project
- Learn financial concepts

Fund raising

- Learn how to raise funds for WRMA functions
- Have links to finance institutions and possibilities
- Share experience with others how to raise funds locally

IWM

- Have a understanding of IWM
- Preserve people from intensive agriculture in mountain areas which are source of rivers
- Learn more about IWM
- Water use management
- Get more education on water uses and environment
- Learn basics about IWM and give input about financing

Socio-economic issues

- Formation of WRUA - how?
- Link policy makers academicians and users
- Be able to understand watershed services
- Who should be compensated for sustainable usage

General

- Filling the gap of my knowledge
- Getting innovative ideas from great minds

These expectations were placed on the wall throughout the summer school and used as a reminder to keep discussions in line with the expectations formulated. During evaluation, expectations were taken again to countercheck the outcome of the summer school.

2.2 Stakeholder Analysis Related to Financing

In this activity, the key stakeholders within the water sectors in Kenya and Tanzania and their relevance to the work of WRUAs and WUAs at catchment level were identified. Key responsibilities of these actors were outlined and set in relation to catchment management, i.e. water resources management and water supply. Administrative structures and ways of interaction or communication were also highlighted with the aim to identify relevant sources for funding in support of local activities. The question was raised how possible donors can be approached - whether indirectly through the WRMA or the PWBO or whether the WRUAs or WUAs can take direct initiative in finding sources of funding to support the implementation of catchment management activities.

The activity consisted of mapping relevant stakeholders in watershed management and possible sources of funding for WRUA and WUA activities. In a first step, representatives of the Ngakinya WRUA and BWARUA in cooperation with WRMA and WSTF identified key stakeholders relevant for water resources management in Kenya. Cards with these stakeholders were placed on the board around the WRUA and WRMA cards placed in the centre and sorted based on subject relevance (e.g. actors involved in conservation, consumers of water, actors responsible of policy formulation and regulation, and sources of funding). In a second step, these actors were placed in relation to the WRUA and WRMA based on direct or indirect communication flow. Representatives of the Kiladeda WUA in cooperation with the PBWO and ministry officials repeated the same activity and identified key stakeholders relevant for water resources management and supply in Tanzania. Cards with these stakeholders were placed on the board around the WUA and PBWO cards placed in the centre and sorted based on subject relevance (e.g. actors concerned with conservation, water consumers, actors involved with policy formulation and enforcement, and possible sources of funding). As before, these actors were placed in

relation to the WUA and the PBWO based on direct or indirect communication flow.

The main criteria for mapping were the relevance of certain actors to the WRUA or WUA in implementing and financing watershed management activities at the local level.
Results were discussed and clarified in a plenary discussion and the list of stakeholders was revised and completed (see section 17). Results on the Ngakinya-Kinyaritha and Bwathonaro Catchments (Kenya) are reflected in Figure 3 while results on the Kiladeda Catchment (Tanzania) are reflected in Figure 4. These figures not only illustrate the key stakeholders relevant for watershed management, but also offer an excellent tool for outlining levels of responsibility, the flow of finances as well as help to identify possible donors for planned activities within the catchment.

2.3 Proposal Writing for Selected Activities

Introduction

During the DAAD Alumni Summer School 2008 held in Meru-Kenya for Participatory Watershed Management in Ngaciuma-Kinyaritha Watershed, a comprehensive sub-catchment management plan was developed. In the plan it was recognized that there was an imbalance between the water demand and water availability (supply), especially during the dry season when irrigation takes place which leads to water scarcity in the sub-catchment. Various alternatives of reducing water demand and addressing the problems which lead to water wastage and losses were pointed out. Some critical issues such as lack of awareness, inequitable distribution and misuse of water within the sub-catchment were identified. To address these and other related problems in the catchment, a sub-catchment plan was developed based on a previously drafted plan during the DAAD Summer School 2007. In the plan about 15 interventions in areas were suggested. During the Summer School 2009, detailed proposals were de-

veloped for selected areas of intervention.

Methodology

A selected intervention was taken as sample for plenary discussion in order to demonstrate a typical method of writing a project proposal. Accordingly a proposal was developed for installation of waste disposal bins in a small local market centre in the sub-catchment to enhance water quality and prevent water pollution. This was followed by the formation of five groups of participants each composed of 5-6 members with different backgrounds and from different countries, to develop one proposal each on selected activities from the sub-catchment management plan. The selected activities for proposal writing include:

- Waste management system in market places
- Awareness creation on water sector reform
- Live fencing of wetlands
- Erosion of river banks and roadsides
- Rainwater harvesting
- Merging pipelines

Each group developed a draft proposal which was submitted for evaluation to the workshop facilitators. An evaluation guideline was developed and distributed to the groups. Criteria for evaluation were as follows:

- Objectives to be in line with the SCMP
- The inner logic (the red thread) of the proposal is clearly formulated and justified- even for outsiders
- Activities in the text are similar to activities in the finance plan

- Budget justification explains all activities not directly visible in the finance plan
- Finance plan is correctly calculated and covers all activities
- Spelling, Form etc.

The proposals were then randomly distributed to the other groups for evaluation. In this case the groups acted as evaluation team from the donor side. The evaluation team presented the proposal and their evaluation report to the plenary with recommendations. Accordingly, while the first four proposals were accepted with major or minor modifications, the last one was rejected due to incompleteness which was attributed to insufficient data and time limitations.

Components of the Proposal:

A - Introduction

This section provides an overview of the context in which the envisaged intervention is to be implemented. It gives information on the entity that is developing the proposal, the physical and socioeconomic environment of the target area.

B - Problem description

This section precisely specifies the causes and the consequences of the problem on the ground that needs intervention.

C - Objectives

Here, the target to be achieved through the specific interventions as a way of addressing the identified problem is formulated. Objectives could be general (purpose/aim) or specific.

D - Activities

Activities are the steps or actions required in order to meet the objectives within specified time period. The activities must be consistent with the

cost centres in the financial plan.

E - Project sustainability

This section is about ensuring the project is accepted and owned by the target community which creates a condition in which the project and its outputs lasts within and beyond its life cycle. A common example could be the interventions that lead to partially or fully self financing through income generation. For a project to be sustainable, the target community should be able to realize the envisaged benefits which can be achieved through awareness creation and participatory planning and implementation.

F - Finance plan

It shows the financial requirements of the activities to be implemented to achieve the objectives of the project. It should clearly indicate the cost items, the rate, quantity and the total amount for implementation of each activity. The sources of fund such as government, community (own contribution), donors, etc. can be indicated. In addition to the details, a breakdown of the budget in standard categories such as transport, labour, equipment and supplies, consumables, daily allowances, etc, should be worked out. This helps also to show the relative budget expenditure in a summarized form.

G - Budget justification

When the budget items, rates or quantities are not self explanatory, additional explanations should be provided. This can be done by giving a code to the items that need explanation in the budget table and providing elaboration for the respective codes under the budget justification.

H - Appendices

Items that contain additional information such as maps, tables, figures, etc, can be accommodated at the end of the proposal as appendices.

3 Results

3.1 Financial Mechanisms for WRUAs and WUAs

There are different financial mechanisms available for WRUAs and WUAs. These include:

- Fee payments
- Members own contribution
- Approaching government institutions
- Writing of proposal for grants
- Approaching banks and other financial institutions for loans

The WRUAs and WUAs can collect funds from members as indicated below which could be used to finance various activities.

Sources of finances	WRUAs (Kenya)	WUA (Tanzania)
Registration Fee	X	
Annual Fee	X	X
Maintenance Fee	Separate arrangement	X
Fine	X	X

The above mentioned sources could be used as financing mechanisms for the WRUAs and WUAs. For instance membership fee for a Kenyan WRUA is about KSh. 2,000. The fee paid annually is used for operating costs of the WRUA. It should however be noted that the funds raised are not enough to be used for other activities in the watershed management plan, hence other financing mechanisms are needed as indicated below.

1. **Members own contribution**

   The WRUAs and WUAs members can come together to contribute funds towards implementation of a given activity. For instance, the members can contribute towards a common kitty a given amount of

money for a given period of time which they can use for a given project. Note that WRUAs and WUAs are expected to be autonomous organisations that can operate their own accounts and take over the operations and maintenance of water management infrastructures.

2. **Approaching government institutions**

   WRUAs and WUAs are obliged to ask for an allocation of funds from either local or central government to fulfil a given budgeted activity(s). In the Kenyan case, the WRUAs can approach for example Local Authority Trust Fund (LATF) and Constituency Development Fund (CDF). To qualify for the grants from the government, the WRUAs should be registered with WRMA and as a community based organization. They are required to present a well formulated proposal, a copy of registration certificate and a bank statement while applying for the grants. In the Tanzanian case, the WUAs submit their proposal to the PBWO, who channels it to the relevant ministry. It should however be noted that these mechanisms are accompanied with delays, uncertainties and insufficient funding. For instance, the funds allocated by the government may not match the requirement by the WRUA and WUA.

3. **Writing of proposals for grants**

   This involves developing a project with specific objectives targeting a specific area in a specific period of time. The proposals are sent to either/both external and internal grant sources who deal with water management activities. The proposal developed is scrutinized by the organizations to see whether it meets the funding criteria. However, the success of getting the grant depends on the capacity of writing the proposal and donors' interest. Hence there is a need for capacity building within the WRUAs and WUAs and/or engaging an expert to develop the proposal.

4. **Approaching banks and other financial institutions for loans**

   WRUAs and WUAs need to approach financial institutions for loans. To access these loans, they should familiarize themselves with the financial procedures. To be considered for the loans, they should have a bank account and a certificate of registration (both as a CBO and with WRMA). Although this is an easy way of getting funds, the WRUAs and WUAs are reluctant in approaching the institutions. This could be attributed to lack of knowledge concerning financial procedures, high interest rates and mode of payments. Note that mature WRUAs and WUAs have a better access to this mechanism since they could have better capacity to handle finances, collateral required and are familiar with the financing procedures.

3.1.1 Revenue through Member Fees

WRUAs and WUAs can raise funds through member fees with registration and annual subscription fees as the major avenues for such revenue. The user associations are also able to raise financing through fines, an avenue that is more developed among WUAs compared to WRUAs. Details through which members contribute to WRUAs and WUAs are presented hereafter.

- **Registration Fees**

  New WRUA/WUA members are required to pay a one-time registration fee to join the associations. The amount varies from one association to another. In Kenya, registration fees vary between KSh 100 to KSh 3,000. The Kiladeda WUA (Tanzania) requires new members to pay up to TSh 160,000.

- **Subscription Fees**

  Subscription fees are paid annually to help finance WRUA/WUA activities. In Kenya, subscription fees are not paid by WRUA mem-

bers, rather by major water abstractors within the catchments. The Kinyaritha-Ngaciuma WRUA has proposed annual subscription fees of up to KSh 1,000. The practice of an annual subscription fee is more developed in Tanzania. All WUA members are required to pay an annual subscription fee. In Kiladeda, each WUA member pays TSh 2,000 annually per irrigation furrow.

- **Abstraction Permits**

  The current practice in Kenya is such that fees for abstraction permits are not paid directly to WRUA but to the WRMA. The WRMA remits some of the fees from abstraction permits to the WSTF, which is then accessed by WRUA through proposal writing.

- **Penalties**

  The WRUAs/WUAs can levy a wide range of fines from illegal water use to absconding from community work. An innovative way of levying fines is for example how it is done by the WUAs in Tanzania. WUAs require members who may not be able to participate in communal work to compensate for the same in monetary terms (up to TSh. 20,000). Fines are also levied for offences like violating the daily water allocation schedule (TSh. 10,000); failure to turn up for community services such as cleaning furrows (TSh. 2,000); blocking an irrigation furrow for selfish reasons (TSh. 5,000), etc.
  WRUAs in Kenya, to a large extent, have not exploited use of fines as a source of revenue. However, the aforementioned does not hold in case of conflicts. In such cases, the offending party meets whatever costs arise during the conflict resolution; e.g. allowances for a WRUA member to go to the disputed site.

3.1.2 Payment for Environmental Services

Properly functioning watersheds support livelihoods by regulating the water quality and quantity, and providing water to a variety of uses and users. The functions of watersheds are continuously being altered by human activities that convert natural landscapes into productive land for agriculture, human settlement or other uses. Integrated Watershed Management (IWM) aims at restoring or improving the watershed functions so that they can serve human and the environment.
Wunder (2005) defines a Payment for Environmental Service (PES) scheme as a voluntary transaction in which a well-defined environmental service (ES) or a form of land use likely to secure that service is bought by at least one ES buyer from a minimum of one ES provider if and only if the provider continues to supply that service (conditionality). PES schemes in watersheds usually involve the implementation of market mechanisms to pay, reward or compensate upstream landowners in order to maintain or modify a particular land use, which is affecting the availability and/or quality of the downstream water resources. They involve contractual transactions between buyers and sellers that may be formal or informal. In addition to the buyer and seller, there may be an intermediary who acts as facilitator, information provider, mediator, trainer, arbitrator and moderator. In proper PES schemes, payment for the services results in benefits that would not otherwise have been provided. The sellers can be individuals or groups and the payment can be made in cash or kind.

Examples of PES Schemes

There are a number of examples for the application of PES schemes for water-related services in many parts of the world such as Latin America, USA, Panama, China, Vietnam, South Africa and Kenya, Uganda, Tanzania and Guinea. Some rather old PES schemes have not been documented comprehensively yet. A few countries have specific legal frameworks for PES at the national or regional level; however, most schemes operate without a specific legal basis. There are now a few pilot PES schemes in Kenya

and Tanzania being spearheaded by various organizations. Examples are Malewa and Sasumua catchments in Kenya and Kibungo-Uluguru Catchment in Tanzania (see appendix 4.1)

3.1.3 Micro Financing Instruments to Develop Small Scale Enterprises

Microfinance provides financial services (e.g. savings, small loans, insurance, and cash transfer) for the benefit of low-income people. This enables for instance the start-up of small scale businesses. Microfinance is typically collateral free, but secured by a cross default provision within a group of borrowers (e.g. village communities). Although microfinance so far has focused on trade and small-scale production, there is also increasing interest in financing water services[1].

Microfinance helps to manage consumption and investments, cope with risks and improve living conditions. Hence, individuals and communities need a variety of services. As far as the water sector is concerned, savings products and micro credits can be considered as the most important tools.

- Access to savings services plays a critical role for minimizing risks, facing unexpected expenditures, and building a small asset base over time. Savings increase the self-financing capacity and thereby reduce the need to take credits. For investment purposes, savings are less risky. Additionally, in case money should be borrowed, savings can serve as collateral.
- Micro credits are small loans provided for instance to small scale enterprises. Those credits are usually characterised by short maturities, limited amounts, fixed repayment schedules and high interest rates. Often potential borrowers are required to save before applying for a loan. Furthermore, innovative techniques like group lending provide a single loan to many small borrowers. Groups utilise a networks of trust and relationships in a village, mutual guarantees, and

[1] Source: DANIDA (2007), 'Financing mechanisms for peri-urban, small towns, and rural water supply'

shared knowledge about eligibility and performance. This helps ensuring repayment of the group loans. If one member fails to repay, repayment has to be covered by the others. The solidarity group guarantees these sub-loans. In Tanzania for example, group lending is performed by MFI Finca.

- One of the most popular microfinance instrument adopted in East Africa is the formation of small cooperative savings and credit associations (e.g. SACCOS in Tanzania). The funds for initiating the union come from small entrepreneurs, either by entering fees or agreed contributions. Funds can be placed in banks or MFIs. Union members are eligible to access loans from the union by submitting a simple proposal or business plan, thereby justifying the repayment of the loan. According to the general economic practices in the region, agriculture and water-related enterprises have highest priority.

- An example related to water conservation is private tree nurseries that sell trees to the Ministry of Forestry for reforestation measures. Alternative private customers are industries (using trees as raw materials) or households (building materials or fire wood). Several loan disbursements according to the "production cycle" or provision of parallel loans meet the requirements of different phases in planting process. For instance, an initial investment loan can be taken for acquiring property, purchasing tree roots, seed, fertilisers, and pesticides as well as machinery. A working capital loan ensures hiring labour for planting and treating the trees. The revenues from selling the trees are the basis for paying back the loans.

- An example for funding by savings and credit associations are farmers (members of the association) who need a credit for purchasing treadle pumps. These pumps should channel harvested rainwater to their farming land for irrigation. The farmers apply for a credit from a MFI, which is covered by the savings of all members of the asso-

ciation. Repayment is assured by the income generated from selling the agriculture products. Furthermore, the savings are not only used as collateral, but also the interest from the savings can be used as an additional source for repayment.

3.1.4 Fundraising

Introduction

Fundraising is a complementary means of raising funds to cover operation and maintenance and sometimes start-up costs of integrated watershed based projects. As a means of project financing, fundraising does not have conditionality for utilisation. Instead it is an ear-marked means of financing. Hence the financing is effective when it is project/activity specific. Application of fundraising allows managerial flexibility to complement other sources of funds.
Examples of fundraising financing sources include membership fees, subscription fees, voluntary contributions, etc. within the watershed management systems of Eastern Africa i.e. fundraising does not have formal structures. Projects where fundraising has been implemented, it has been on an ad hoc basis. As a result, the financial sustainability of watershed projects is not guaranteed. An inbuilt fundraising structure needs to be developed within the project formulation process.

Fundraising methods and country experience

1. Membership fees
   This is a one time off source of revenue to WRUA/WUA. Membership fees should be project/task oriented/specific. The potential of this fundraising revenue base depends on: enforcement mechanism in place; number of contributors; level of household incomes; and nature of economic activity in the community.
   For example, in Kenya/Tanzania, WRUA/WUA members are required to contribute funds to process the registration of the association.

Such contributions pay for the WRUA start-up costs and so are irrelevant when assessing financing sustainability. Also, in Kenya a member who intends to abstract water pays an approval fee of KSh. 2,000.

2. Subscription fees
   This is an annual contribution by a member of a registered association. In Tanzania, this form of financing has been implemented. For example, in poor communities of the south-western highlands (Usangu Plains) members pay TSh. 3, 000 to 4,000 per acre per annum. In Kiladeda water sub-catchment area, within Pangani basin the unemployed community members pay TSh. 2,000 while the salaried members within the scheme pay TSh. 20,000 per annum since they do not participate in the day to day activities of watershed maintenance. Also, the WUA of Moshi Irrigation Scheme pays TSh. 75,000 per annum for an average 0.3 ha of land size.
   In Kenya, annual subscriptions are collected by WRUA and used to fund some of the activities like transport, communication, tree planting etc. Evidence available indicates that water user charges are collected by WRMA from the individuals and projects within the catchment area and is given back to fund WRUA activities through request to WSTF. Also, members pay an application registration fee of KSh. 2,000 per person to WRUA on an annual basis. As a result the water associations in Kenya do not directly access the user charges to finance the watershed operations and maintenance costs.

3. Auctioneering
   This method of fundraising, though important, has not been explored. There is potential for community members who use the water resources, to contribute a portion of their farm produce like harvested crops, goats, cows etc to their respective associations. These contributions can in turn be auctioned. A similar method is already practiced in churches and schools within the water catchment areas.

For example in Tanzania a cock costing about TSh. 8,000 can fetch up to TSh. 20,000. However, WRUA/WUA implementers should note that auctioning activity costs money. Therefore, implementation must ensure that auctioneering costs do not exceed 20% of the expected revenue.

4. Voluntary contribution
   This may be monetary contributions or in-kind like labour for cleaning a canal, and/or farm produce. Both in Kenya and Tanzania, voluntary contribution is done at an ad hoc level. Therefore, this form of financing needs to be integrated within the wide framework of project formulation.

Other fee charges
These include:

1. Percentage charge imposed on sale of land to a new member in the farming community
2. Percentage charge on collection of land rental fees per irrigation season
3. Conflict resolution fees. For example, KSh. 1,000 per case is charged. In Tanzania, the case loser pays a fee of TSh. 10,000. These charges are used to pay the allowance costs of the committee members. 50% comes back to the WUA as a source of income.

Procedure to integrate fundraising into Project formulation/implementation

1. Create awareness with the community about the need to have sustainable financing of the watershed projects.
2. Community to come up with standard approaches to fundraising activity. This standard should specify the rate, frequency, etc.
3. Information in (b) above be integrated in the WUA/WRUA constitution and by-laws.

Implementation
The WUA/WRUA treasurer is the responsible officer. Results of fundraising activity should be reported on in community meetings at regular intervals. The following are critical issues required for successful implementation:

1. Transparency and accountability. Any decision involving use of fundraised money should have an approval of the association's General Meeting. At least once a year the treasurer should present to association members statements of financial results.

2. A membership register should be updated on a quarterly basis every year.

3. Since the fundraising activity is project/task specific, there should be a proper record keeping system which includes:
   - A register of all meeting minutes.
   - A register of all sources of fundraising.
   - A register of all approved expenditures.
   - A record of audited accounts.
   - A record of all expenditure receipts and payment vouchers.

4. Organisational structure with a clear span of managerial control should be in place.

3.2 Examples for Proposal Writing

During the DAAD Alumni Summer School working groups developed proposals for financing the implementation of selected activities based on the Sub-catchment Management Plan drafted during the DAAD Alumni Summer School 2008. These examples of proposals shall assist WRUA's, WUA's, WRMA, and PBWO in writing own proposals for their individual

requests. However, the shown proposals have not been submitted to any donor and positive evaluation by copying the proposals is not guaranteed.

3.2.1 Waste Management System in Market Places

Introduction

Within the Water Sector Reforms in Kenya, Water Resources User Associations (WRUA) have been established to work in close cooperation with the Water Resources Management Authority (WRMA). The WRUAt's mandate is to manage water resources within their catchment area and solve conflicts on water related issues.
The Kinyaritha-Ngaciuma WRUA, established in 2007, drafted a Subcatchment Management Plan (SCMP) for 2008. This plan includes a situation analysis of the watershed, proposed management options and activities (see appendix 1). Within the SCMP, activities to enhance the water quality and to prevent pollution were agreed upon.

Problem description

Within the watershed, there are a number of periodic rural markets. The types of waste generated from the market centres include biodegradable waste, plastics and metallic products. The current way of disposing their waste is to dispose it to the market area; the waste is carried by rain water and wind to the river. Improper disposal of solid waste generated from the markets leads to water pollution in the watershed including the Ngaciuma River. Ngaciuma River supplies water to 300 water supply projects serving about 60.000 persons.
The water in the river is polluted. There are concerns that one of the reasons is the solid waste disposal in the market centre. This is attributed to lack of capacity, awareness and facilities for solid waste disposal in the catchment area, in particular the market centres. If this problem is not addressed, it may lead to outbreak of water related diseases.

Objective

The overall objective is to enhance water quality in the water sources and prevent water pollution by improving waste disposal methods at the market centres within the watershed.
Specific objectives are to establish:

- 5 waste bins at market centres for each solid waste and compostable waste
- a disposal site for solid waste including composting

Activities

1. **Consult market committee to identify location of bins**
   WRUA will organise a meeting with the market committee to address the solid waste problem and to suggest the installation of a waste collection and disposal system.
2. **Install the waste bins at the market centre and construct the disposal site**
   Waste bins are purchased and transported to the market centre and placed at suitable places. A hand cart and tools for composting are purchased.
3. A quarter of acre of land will be acquired Three disposal sites, each $10m^3$ will be constructed and the area will be fenced.
4. **Reporting the progress to the community on waste management system**
   WRUA will organise a meeting to report on the progress on implementing the waste management plan and prepare the community for the ownership of the project. A facilitator will guide through the process.
5. **Operate and maintain the waste management system**
   An operator will be recruited for the collection and transport of the

solid waste, for control of the separation and regular maintenance of the waste disposal site.

6. **Monitoring and evaluation of the project**
   The WRUA will follow up the activities of the project through assigning one member and through quarterly visits to the market place. The WRUA will present a brief progress report at market committee meeting. At the end of the year, an external evaluation will be carried out by an external expert (NEMA). The results are submitted to the WRUA and WRMA.

Sustainability

Capacity building for the local population is part of the SCMP to secure sustainability of any actions regarding natural resource management. Capacity building will be done through several workshops chief barazas etc. and will be supported by the WRMA.
It is expected to generate income to stabilize the waste collection system financially through selling of compost and recyclable materials. A possibility of WRUA entering collaboration with the County Council for the sustainable ongoing of the project will be explored in line with the evaluation report.

Finance Plan in KSh

A - Consult market committee to identify location of bins

	Item	Rate	Quantity	Amount	
1	Transport	400	5	2,000	
2	Communication	500	1	500	
3	Daily Allowance	500	10	5,000	
	Sub-total			**7,500**	

B - Install the waste bins at the market centre and construct the disposal site

	Item	Rate	Quantity	Amount	
4	Bins	5,000	10	50,000	
5	Transportation of bins	2,000	1	2,000	
6	Hand-cart for waste disposal	20,000	1	20,000	
7	Tools for composting	5,000	1	5,000	
8	Installation	5,000	10	50,000	
9	Labour	500	2	1,000	
10	Land for disposal site (0,25 acres)	100,000	1	100000	
11	Pits (02 for bio, 01 for plastics) - @ $10m^3$	500	30	15,000	
12	Fencing - chain link (30 x 30 m) and posts	26,000	1	26,000	
13	Labour	500	8	4,000	
	Sub-total			**273,000**	

C - Reporting the progress to the community on waste management system

	Item	Rate	Quantity	Amount	
14	Transport	400	6	2,400	
15	Communication	500	1	500	
16	Stationery	3,000	1	3,000	
17	Daily Allowance - locals	500	40	20,000	
18	Daily Allowance - facilitator	2,000	1	2,000	
	Sub-total			**27,900**	

D - Operate and maintain the waste management system, year 1

	Item	Rate	Quantity	Amount	
19	Wage for 1 Hand-cart driver	150	250	37,500	
20	Maintenance (cart, pits, etc)	5,000	1	5,000	
21	Compost handling (fortnightly)	300	26	7,800	
	Sub-total			**50,300**	

E - Year 1 Monitoring and evaluation of the project

	Item	Rate	Quantity	Amount	
22	Transport (1 No. WRUA travels quarterly, 4 No. WRUA for evaluation meeting, 1 No. expert)	400	9	3,600	
23	Stationery (4 No. Meetings)	1,000	4	4,000	
24	Daily allowance/lunch	500	30	15,000	
25	Daily Allowance - M and E expert (incl. evaluation report)	10,000	1	10,000	
	Sub-total			**32,600**	

Total: 391,300

Breakdown

	Category	Notes	Subtotal	
A	Labour	9, 11, 13, 19, 21	65,300	17%
B	Daily Allowance	3, 17, 18, 24, 25	52,000	13%
C	Transport	1, 5, 14, 22	10,000	3%
D	Equipment and Supplies	4, 6, 7, 8, 10, 12	251,000	64%
E	Consumables	2, 15, 16, 20, 23	13,000	3%
	Total		**391,300**	

Budget Justification

1. **Consult market committee to identify location of bins**
   Five WRUA members need to travel to the market place for the meeting.

2. **Installation of waste bins at the market centre and construct the disposal site**
   Installation of all bins includes 5000 Ks construction material and 2 man-days labour work (ref. to on. 8 and 9 finance plan). The private land needed for the disposal site is bought to be transferred to public land (ref. No 10 of finance plan). The installation of the disposal site need 8 man days labour work.

3. **Reporting the progress to the community on waste management system**
   Five WRUA members and the facilitator need to travel to the market place. 35 people will attend to the meeting.

4. **Operate and maintain the waste management system**
   No explanation.

5. **Monitoring and evaluation of the project**
   For the evaluation meeting, 4 WRUA members and the facilitator

need to travel to the market place. 25 people will attend to the meeting.

Appendix

Sub Catchment Management Plan 2008 (see appendix 4.2)

3.2.2 Awareness Creation on Water Sector Reform

Introduction

The Ministry of Water and Irrigation is undertaking reforms in the water sector under the Water Act 2002. The act created institutions such as the Water Resource Management Authority (WRMA), the Water Services Trust Fund (WSTF), the Water Services Regulatory Board (WSRB), etc. Under WRMA, there are institutions such as Catchment Area Advisory Committees (CAAC) and Water Resource Users Association (WRUA). The mandate of WRUA as provided for in the Water Act is to conserve and protect watersheds. However, the communities are not aware of their responsibilities within the catchment area as provided for in the water reforms.

Problem Description

The community within the catchment is not aware enough of the reforms undertaken in the water sector. During the preparation of the sub-catchment management plan (SCMP), issues on water sector reforms emerged. The detailed SCMP is herein attached (see Appendix II). These include: water demand, irrigation efficiency, equitable distribution, water resource management, seasonal variability and monitoring of awareness creation.
If the aforementioned issues are not addressed, water conflicts and environmental degradation will continue unabated.

Objective

The overall objective is to create awareness on the water sector reforms as

identified in the SCMP.

Activities

The activities required to achieve the above objective include:

1. **Mobilisation of 50 No. participants for each workshop**
   One of the WRUA members will meet the village chiefs to request the chiefs to mobilize the communities for the workshop. The target group for the workshop will be stakeholders including local leaders, members of the catchment, NGOs, CBOs, and relevant institutions.

2. **Identify venue for workshop**
   A WRUA member will move within the catchment area and identify a venue from where the workshop can conduct.

3. **Identify facilitators for the workshop**
   Two experts will be identified from the Ministry of Water and Irrigation to facilitate the workshop.

4. **Conduct the Workshop**
   Fifty members of the catchment community will be invited for each of the two workshops.

5. **Evaluation**
   An expert will be hired to evaluate the impact of the awareness workshops. The expert shall write a report on his findings and disseminate the same to WRUA and WRMA.

Sustainability

It is assumed that once the workshops have been conducted, participants will help in disseminating acquired knowledge to the rest of the community. This will go a long way in enhancing sustainability as more members enrol in the WRUA. Furthermore, subsequent awareness workshops on water sector reforms will be held but they shall not require funding, e.g. through Chieft's Barazas, religious meetings, etc.

Finance Plan

A total of KSh. 76,300 will be required to finance the above activities for a single workshop. For two workshops, the total amount will be KSh. 152,600. The breakdown of the financing requirements is shown in Figure 3.1 below. The detailed Financial Plan is presented in Appendix I.

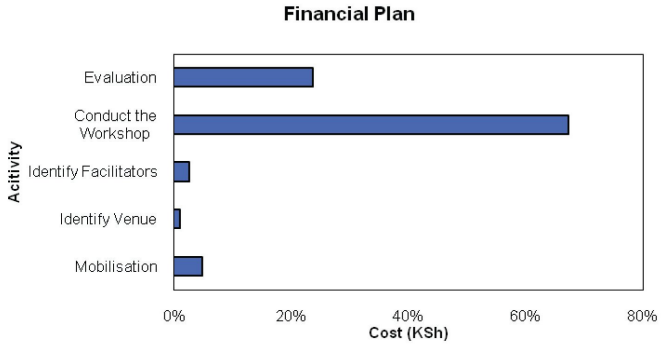

Figure 3.1: Financial Breakdown per Activity

Budget Justification

- **A - Mobilisation of 50 No. participants for each workshop**
  The 50 No. Participants in the workshop will be selected from a various stakeholders including local leaders, members of the catchment, NGOs, CBOs, and relevant institutions.
  Two workshops are needed - one to cover the upper catchment, the other to capture the lower catchment

- **D - Conduct the Workshop**
  The cost of hiring a venue sufficient for the required number of par-

ticipants ranges between KSh 2,000 to KSh 3,000 within the catchment.
Two facilitators are necessary to tap a broad range of expertise on reforms.

Appendices

1 - Budget in KSh.

A - Mobilisation of the participants (50 No.)

	Item	Rate	Quantity	Amount	
1	Transport (mobiliser makes 04 trips)	400	4	1,600	
2	Daily Allowance for mobiliser (04 days)	300	4	1,200	
3	Communication	1,000	1	1,000	
	Sub-total			**3,800**	

B - Identify venue for workshop

	Item	Rate	Quantity	Amount	
4	Transport	400	1	400	
5	Communication	500	1	500	
	Sub-total			**900**	

C - Identify facilitators

	Item	Rate	Quantity	Amount	
6	Communication	2,000	1	2,000	
	Sub-total			**2,000**	

D - Conduct the workshop

	Item	Rate	Quantity	Amount	
7	Hire of Venue	2,000	1	2,000	
8	Transport - locals	400	50	20,000	
9	Transport - facilitators	1,200	2	2,400	
10	Daily Allowance - locals	300	50	15,000	
11	Daily Allowance - facilitators	3,500	2	7,000	
12	Stationery	5,000	1	5,000	
	Sub-total			**51,400**	

E - Evaluation

	Item	Rate	Quantity	Amount	
13	Transport - expert	600	2	1,200	
14	Daily Allowance - expert	3,500	2	7,000	
15	Report Writing and Dissemination	10,000	1	10,000	
	Sub-total			**18,200**	

Total - 76,300

Breakdown

	Category	Notes	Amount	
1	Daily Allowance	2, 10, 11, 14	30,200	
2	Transport	1, 4, 8, 9, 13	25,600	
3	Consumables	3, 5, 6, 7, 12, 15	20,500	
	Total		**76,300**	

2 - Sub-catchment Management Plan for NGAKINYAWRUA 2008

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3.2.3 Rehabilitation of Mpuke Wetland in Ngaciuma-Kinyaritha Watershed

Introduction

Kenya is classified as a water-scarce country with per capita of water being below the global benchmark of 1000 cubic metres. Under section 15(5) of the Water Act 2002, the Water Resources User Associations (WRUAs) are mandated to manage water resources and solve water conflicts in co-operation with other stakeholders. The Ngaciuma-Kinyaritha (Ngakinya) WRUA was established in 2007 to manage water resources within the catchment of Kinyaritha and Ngaciuma rivers. It is registered with the office of the Attorney General and WRMA. It prepared a Sub catchment Management Plan (SCMP) in 2007. The planned activities to protect the catchment include alienation and reclamation of the wetlands, awareness creation of water sector reform, riverbank protection, control of water pollution, reforestation, improving water use efficiency, soil conservation and conflict resolution among others. The WRUA has chosen to reclaim Mpuke wetland as the first priority due to the diminishing water resources from the wetland.

Problem description

The biggest wetland in the catchment is Mpuke and it is approximately 100 acres. It is owned by the County Council of Meru but many farmers have encroached on the wetland. This could be attributed to lack of

fencing of the wetland and law enforcement. The wetland encroachment by the farmers has led to destruction of the natural habitat of animals and plants which are commonly found in this region. The natural vegetation clearance by the farmers has led to drying of the springs that feed the Kinyaritha and Ngaciuma Rivers, which support 300 water supply projects and 60,000 people. The communities living around the wetland have to walk longer distances to get water and conflicts over water are increasing. If the wetland encroachment problem is addressed, the water flows from the wetland will increase.

Objective

The main objective is to rehabilitate and reclaim the Mpuke wetland in order to regulate flows in Ngaciuma-Kinyaritha Rivers and restore the wetland.
The specific objectives are

- to re-establish conditions that enhance growth of natural vegetation in Mpuke wetland through installation of live-fence
- to promote participatory law enforcement with regard to wetland encroachment

Activities

The activities to be undertaken are:

1. **WRUA to approach the county council to get permission**
   Since the land is owned by the Meru County council, 3 WRUA members will travel to the council offices to get permission to rehabilitate Mpuke wetland.

2. **Approach Dept of Survey to get the wetland surveyed**
   Three WRUA members will travel to the District survey office to request for survey of the wetland.

3. **Surveying of the wetland and erecting beacons**
   For the wetland boundary marking, a registered surveyor will be engaged to mark the boundaries of the wetlands and establish beacons.

4. **Meeting of people using wetlands called by Provincial Admin & Issuing of notice**
   The county council will convene a meeting of WRUA committee members, other stakeholders and the people who have allocated themselves land on the wetland. And inform them that they will have to vacate to pave way for conservation of the wetland. During the meeting people will be sensitised on the importance of wetland conservation.
   The council will give them a deadline on when they should vacate the wetland.

5. **Erecting barbed wire fence to mark boundary and protect wetland**
   To mark the boundary and protect the Mpuke wetland with an area of about 100 acres, barbed wire fence will be erected.

6. **Establishment of tree nursery of suitable indigenous trees for marking boundary**
   A tree nursery will set up near the wetland to grow seedlings which can later be used for the live fence. A shade will be constructed and watering cans and hosepipes acquired.

7. **Planting the fence under WRUA supervision**
   A euphorbia fence will be planted on the boundary. The euphorbia will be collected from the neighbouring farms.

8. **Caring for seedlings e.g. watering, weeding, pruning, fencing**
   A care taker will be employed to water, weed, and prune the live fence

9. **Monitoring and evaluation**
   The WRUA committee members will make a weekly schedule to supervise the workers employed to take care of the seedlings. The WRUA committee will meet quarterly to evaluate the project.

10. **Handing over of the wetland to WRUA after three years**
    A meeting will be held on the wetland to officially hand over the management and conservation of the wetland to the WRUA and to create awareness to the community on the need to protect the wetland. About 200 water project officials are expected to come for the occasion.

Sustainability

The WRUA and the County Council will work together to ensure that farmers do not encroach into the wetland. The law will be enforced with the support of the provincial administration. The WRUA will work with other agents to promote alternative sources of income from farms and wetlands. In the SCMP, there are activities dedicated to promotion of alternative income generation activities and this will contribute to keeping the farmers away from the wetland.

Financial Plan

A - WRUA to approach the county council to get permission

	Item	Rate (KSh)	Quantity	Amount (KSh)	
1	Transport of 3 WRUA members	200	3	600	
2	Daily allowance for 3 WRUA members	400	3	1,200	
3	Communication	500	1	500	
	Sub-total			**2,300**	

B - Approach Dept of Survey to get the wetland surveyed

	Item	Rate (KSh)	Quantity	Amount (KSh)	
4	Transport of 3 WRUA members	200	3	600	
5	Daily allowance	400	3	1,200	
6	Communication	500	1	500	
	Sub-total			**2,300**	

C - Surveying of the wetland and erecting beacons

	Item	Rate (KSh)	Quantity	Amount (KSh)	
7	Surveyors fee per km	20,000	2,5	50,000	
	Sub-total			**50,000**	

D - Meeting of people using wetlands called by Provincial Admin & Issuing of notice

	Item	Rate (KSh)	Quantity	Amount (KSh)	
8	Transport of 25 WRUA members to meeting	200	25	5000	
9	Daily allowance of 25 WRUA members	400	25	10,000	
10	Stationery	500	1	500	
11	Labour for delivery of letters	300	1	300	
	Sub-total			**15,800**	

E - Erecting barbed wire fence to mark boundary and protect wetland

	Item	Rate (KSh)	Quantity	Amount (KSh)	
12	Barbed wire rolls	2,500	17	42,500	
13	Posts	300	900	270,000	
14	Nails	200	60	12,000	
15	Cement	850	45	38,250	
16	Ballast in tonnes	1,500	7	10,500	
17	Sand in tonnes	2,000	14	28,000	
18	Labour in mandays	300	120	36,000	
	Sub-total			**437,250**	

F - Establishment of tree nurseries

	Item	Rate (KSh)	Quantity	Amount (KSh)	
19	Bags for planting seedlings in packets of 1200	600	2	1,200	
20	Seeds in kg	500	5	2,500	
21	Labour for seedbed preparation	300	5	1,500	
22	Shade construction materials	5,000	1	5,000	
23	Watering cans	1,500	2	3,000	
24	Hose pipes 120 m	900	2	1,800	
25	Labour for planting seedling in bags	300	4	1,200	
26	Labour for caring for seedlings on seedbed	300	104	31,200	
27	Labour for construction of shade	300	4	1,200	
	Sub-total			**48,600**	

G - Planting the fence under WRUA supervision

	Item	Rate (KSh)	Quantity	Amount (KSh)	
28	Labour for collection of euphorbia	300	30	9,000	
29	Labour for digging trench for euphorbia	300	30	9,000	
30	Labour for planting the euphorbia	300	15	4,500	
31	Labour for planting boundary marker trees	300	30	9,000	
	Sub-total			**31,500**	

H - Caring for newly planted seedlings

	Item	Rate (KSh)	Quantity	Amount (KSh)	
32	Labour for caring for seedlings on fence	300	520	156,000	
	Sub-total			**156,000**	

I - Monitoring and Evaluation

	Item	Rate (KSh)	Quantity	Amount (KSh)	
33	Transport of 25 WRUA members	200	100	20,000	
34	Daily allowance for 25 WRUA members	400	100	40,000	
	Sub-total			**60,000**	

J - Handing over after three years

	Item	Rate (KSh)	Quantity	Amount (KSh)	
35	Transport of 25 WRUA members	200	25	5,000	
36	Daily allowance for 200 participants	400	200	80,000	
37	Stationery	1,000	1	1,000	
38	Communication	1,000	1	1,000	
39	Allowance for media coverage per media house	3,000	3	9,000	
40	Lunch allowance for guests	300	50	50,000	
	Sub-total			**111,000**	

Total

TOTAL		**914,750**
OWN CONTRIBUTION		**35,700**
GRAND TOTAL (AMOUNT REQUESTED)		**879,050**

Budget breakdown

Category	Notes	Sub-total	Percentage
Allowances	2, 5, 9, 34, 36, 39, 40	156,400	17.1
Consumables	3, 6, 10, 37, 38	3,800	0.4
Labour	11, 18, 21, 25, 26, 27, 28, 29, 30, 31, 32	258,600	28.3
Professional surveyor's fee	7	50,000	5.5
Equipment and supplies	12, 13, 14, 15, 16, 17, 19, 20, 22, 23, 24	414,750	45.3
Transport	1, 4, 8, 33, 35	31,200	3.4
Grand Total		**914,750**	
Own Contribution	11, 21, 25, 27, 28, 29, 30, 31	**35,700**	3.9

Budget Justification

- Item 7: Surveyors fee is the professional fee paid to a registered private surveyor to mark the boundaries of the wetlands and establish beacons.
- Item 35: A meeting will be held on the wetland to officially hand over the management and conservation of the wetland to the WRUA and to create awareness to the community on the need to protect the wetland. About 200 water project officials are expected to come for the occasion.
- Item 39: Lunch will be provided for 50 people who include 25 WRUA officials and 25 representatives from line ministries, NGOs and other stakeholders.

- Items 11, 21, 25, 27, 28, 29, 30, 31: These items will be the own contribution in kind from the applicant.

Appendices

- Ngakinya WRUA Sub catchment Management Plan (SCMP)
- Copy of WRUA registration certificate

3.2.4 Control of Erosion on Riverbanks in the Ngaciuma-Kinyaritha Watershed

Introduction

Within the water sector reforms in Kenya, WRUA's have been established to work in close cooperation with the Water Resource Management Authority (WRMA). WRUA's are mandated to manage water resources within their catchment area and to solve conflicts on water related issues. The Ngaciuma-Kinyaritha WRUA was established in 2007, drafted a sub-catchment management Plan (SCMP). The SCMP includes a situation analysis of the watershed, proposed management options and activities (Appendix 1). Within the SCMP, activities to enhance the water quality and minimize water pollution were agreed upon. Ngaciuma-Kinyaritha WRUA now seeks funding to implement the control of erosion.

Problem Description

The watershed covers an area of 166 km^2. The Ngaciuma River is the main source of water for 300 water projects serving about 65,000 people. Within the watershed, there are many subsistence and small scale farmers who undertake various agricultural activities. Due to the population pressure, farm sizes are small and intensively cultivated. Riverbanks are also annexed and cultivated with Napier grass, arrow roots, etc., being the main crops grown. Grazing of farm animals on river banks is common leading to erosion and destruction of the riverbanks.

A recent survey[2] by WRUA committee raised concerns on the deteriorating water quality in the Ngaciuma River. Of major concern were the high sediment levels as indicated by the deep brown colour of the water. Further downstream, siltation of major water reservoirs has been reported by WRMA.
There are concerns that erosion especially on riverbanks is the main source of sediments found in the river water. This attributed to the lack of capacity, awareness and poor farming methods within the catchment area. If this problem is not addressed, there is a likelihood that farm productivity may drop further (or increase cost food production due to increase in the use of farm inputs) thereby compromising food security, while siltation of reservoirs may reduce their capacity which will negatively affect hydro-power generation.
Objectives The overall objective is to reduce erosion on riverbanks within the catchment area.
The specific objectives are:

- to protect the banks of Kinyaritha River using vegetative cover
- to sensitize people on riverbank erosion control

Activities

1. **Consultative meeting at the Chief's Camp**
   WRUA to organize meetings to address the erosion of riverbank problem. During the meeting, the identification of a suitable site and specifications of 2 demonstration plots shall be discussed. A small committee of 11 people (comprising of WRUA, WRMA, Land officer and village representatives) will be elected.
   A second meeting to provide the progress in the establishment of the demonstration report shall be organized. This will be followed by a visit by a group of 20 non-committee members to the demonstration site will be organized.

[2]Discussions and observations made during the DAAD Summer School in Meru, Kenya in November 2008

2. **Establishment of the Demonstration Site**
   Two demonstration sites for riverbank protection will be established in the upper and middle zones of the catchment. Each demonstration site will measure 20m wide by 100 m long on both sides of the river. The demonstration sites will be demarcated and any unwanted tree species cleared. It will be fenced and the land prepared and water-friendly tree-seedlings and grass purchased and planted. A tree nursery will be established in each of the demonstration sites, to be utilized by the community in future (up-scaling the demo).

3. **Reporting the progress to the community on the establishment of the demonstration sites**
   WRUA will organize a meeting to report on the progress made towards the establishment of the demonstration sites and prepare the community for the ownership of the project. WRUA will invite an expert/facilitator to guide through the process.

4. **Operation and maintenance of the demonstration sites**
   One person will be recruited for each demonstration site to take care of the young seedlings, grass and tree nursery until full establishment.

5. **Monitoring and Evaluation**
   WRUA will follow up the activities of the project through weekly reports from the person recruited to take care of the demonstration site. In addition, the small committee formed at the initial meeting will visit each site on a monthly basis and WRUA will report to the stakeholders on a quarterly basis.
   At the end of the year, an external evaluation will be carried out by an external expert (NEMA) and the results forwarded to WRUA and WRMA.

6. **Field Visit to Demonstration Site**
   WRUA will organize to take a group of 20 non-committee members

(drawn each zone within the catchment and a representative from each school) to visit the demonstration sites. The aim of the visit will be to enable the group appreciate what has been done and implement the same at their section of the river.

Sustainability

Capacity building of the population is a part of the SCMP to secure the sustainability of any actions regarding natural resource management. Capacity building will be done through several workshops, chief barazas etc and will be supported through WRMA.

It is expected to generate income to stabilize the demonstration sites financially through the selling of grass and tree seedlings.

The possibility of collaboration between WRUA and the big stakeholder such as Kenya Electricity Generating Company (KenGen) and the local County Council for the sustainable ongoing of the project, preferably through Payment for Environmental Services concept will be explored in line with the evaluation report.

Financial Plan

Below is a cost breakdown of the Ngaciuma-Kinyaritha WRUA control of riverbank erosion for the first year of implementation. The costs have been determined based on the project's active breakdown as described under the Activities section above.

A - Consultative meeting at the Chief's camp

				Amount KSh	
	Item	Rate (KSh)	Quantity	One Site	Two Sites
1	Transport	400	31	12,400	24,800
2	Communication	500	1	500	1,000
3	Daily allowances	500	31	15,500	31,000
4	Stationery	1,000	1	1,000	2,000
5	Facilitator Allowance	2,000	1	2,000	4,000
	Sub-total			**31,400**	**62,800**

B - Establishment of the Demonstration Site

				Amount KSh	
	Item	Rate (KSh)	Quantity	One Site	Two Sites
6	Transport	400	11	4,400	8,800
7	Daily Allowance	500	11	5,500	11,000
8	Materials for Fencing	98,000	1	98,000	196,000
9	Labour for Fencing	500	24	12,000	24,000
10	Labour for land preperation	500	6	3,000	6,000
11	Tree seedlings	160	20	3,200	6,400
12	Grass seeds	1,500	2	3,000	6,000
13	Labour for Planting trees/grass	500	6	3,000	6,000
14	Seeds and materials for establishing a tree nursery with shed	10,000	2	20,000	40,000
15	Tools	20,000	1	20,000	40,000
	Sub-total			**172,100**	**344,200**

C - Operation and Maintenance

				Amount KSh	
	Item	Rate (KSh)	Quantity	One Site	Two Sites
16	Labour for nursery/maintaining site	300	250	75,000	150,000
17	Labour for water quality (siltation control)	500	12	6,000	12,000
	Sub-total			**81,000**	**162,000**

D - Progress meeting at the Chief's Camp

				Amount KSh	
	Item	Rate (KSh)	Quantity	One Site	Two Sites
18	Transport (5 officials, 1 facilitator, 25 villagers)	400	31	12,400	24,800
19	Communication	500	1	500	1,000
20	Daily allowances (50 villagers, 5 officials)	500	55	27,500	55,000
21	Stationery	1,000	1	1,000	2,000
22	Facilitator Allowance	2,000	1	2,000	4,000
	Sub-total			**43,400**	**86,800**

E - Monitoring and Evaluation

				Amount KSh	
	Item	Rate (KSh)	Quantity	One Site	Two Sites
23	Transport (10 persons, 12 times per year)	400	12	4,800	9,600
24	Daily allowances	500	12	6,000	12,000
25	Communication	500	1	500	1,000
26	Expert Evaluation per year	10,000	1	10,000	20,000
27	Stationery	2,000	1	2,000	4,000
28	Transport (20 villagers to attend evaluation meeting)	500	20	10,000	20,000
	Sub-total			**33,300**	**66,600**

F - Field Visit by a Group of 20 non-committee Members

				Amount KSh	
	Item	Rate (KSh)	Quantity	One Site	Two Sites
29	Transport (1 facilitator and 20 non-committee members)	400	21	8,400	16,800
30	Daily allowances	500	20	10,000	20,000
31	Facilitator Allowance	2,000	1	2,000	4,000
32	Communication	500	1	500	1000
33	Stationery	500	1	500	1,000
	Sub-total			**21,400**	**42,800**

Total: 765,200

Breakdown

Category	Notes	Sub-total	Percent
Labour	9, 10, 13, 16, 17	198,000	25.9
Allowances	3, 5, 7, 20, 22, 24, 26, 30, 31	161,000	21.0
Transport	1, 6, 18, 23, 28, 29	104, 800	13.7
Equipment and Supplies	8, 11, 12, 14, 15	288,400	37.7
Consumables	2, 4, 19, 21, 25, 27, 32, 33	13,000	1.7
Total		**765,200**	**100**

Budget Justification

The total cost for the project is KSh. 765,200 (Seven hundred and sixty five thousand, two hundred Kenyan Shillings). Of this total cost, WRUA and the community will contribute KSh. 72,333 (Seventy two thousand three hundred and thirty three Kenyan Shillings).
Consequently, the WRUA is requesting for **KSh. 692,867** (Six hundred and ninety two thousand, eight hundred and sixty seven Kenyan Shillings).

1. **Consultative meeting at the Chief's Camp**
   The meeting will comprise of 31 participant's representing the various stakeholders in the community (including WRUA, WRMA, county council and village representatives, and one Officer from the Ministries of Land, Agriculture and Forestry). Each participant is to be provided with transport and daily allowance. Members need to travel to the market place for the meeting. This composition and organization of the feedback meeting to report on the progress for the establishing the demonstration sites will be similar to the initial consultative meeting.
   The WRUA will contribute one third of the daily allowance item 3 in the financial plan equivalent to KSh. 10,333 (Ten thousand, three hundred and thirty three Kenya Shillings).

2. **Establishment of the Demonstration Site**
   A committee of eleven members will be facilitated to visit and demarcate and design the demonstration site. Labour will be required to clear the land, prepare holes for fencing poles, fence the site and prepare the land, and plant water friendly trees and grass.
   One person will be recruited to take care of each demonstration site. The necessary tool including wheelbarrow, hoes, slashers, etc will be acquired for each demonstration site.
   The community will provide labour for items 9, 10 and 13 in the financial plans equivalent to a total of KSh. 36,000 (Thirty six thousand Kenyan Shillings).

3. **Progress Meeting at the Chief's camp**
   WRUA will organize a meeting to report on the progress of the establishment of the demonstration plots. 50 villagers will be invited. Half of the villagers plus 5 WRUA officials and one facilitator will be provided with transport to attend the meeting.
   The WRUA will contribute one third of the daily allowance item 18 and 20 in the financial plan equivalent to KSh. 26,600 (Twenty six thousand, six hundred Kenya Shillings).

4. **Operation and Maintenance**
   One person will be recruited to take care of each demonstration site every day. Once a month, one person will be hired to collect water samples at the top and bottom of the demonstration site for sediment analysis, and present the data to the WRUA to for incorporation to the monitoring and evaluation report of the intervention.

5. **Monitoring and Evaluation**
   Each month transport will be provided to the small committee formed during the consultative meeting to visit each site, and given a daily allowance. An external evaluator will be recruited at the end of the year. During the meeting to present his report, 20 villagers will be facilitated to attend the meeting.

6. **Field Visit to Demonstration Site**
   After establishing the demonstration site, one facilitator and 20 non-committee members will be facilitated to visit each of the demonstration sites.
   The WRUA will contribute one third of the daily allowance item 30 in the financial plan equivalent to KSh. 6,666 (Six thousand, six hundred and sixty six Kenya Shillings).

Acknowledgements

This proposal was compiled during the DAAD Summer School held at

Moshi, Tanzania from 14th to 25th September 2009. Acknowledged are members of group 4: Tumuhimbisse Manasseh, Callistus Mponzi, Protas Mushi, Andrew Talimo and Urbanus Mutwiwa.

Appendices

Sub-catchment Management Plan (see Annex 4.2)

3.2.5 Promotion of Rainwater Harvesting - 5 Roof Catchments to be established at Private Households and Schools

Introduction

Within the water sector reform in Kenya, Water Resource User Associations (WRUA) has been established to work in close cooperation with the Water Resource Management Authority (WRMA). The WRUA's mandate is to manage water resources within their catchment area and solve conflicts on water related issues.
The Kinyaritha-Ngaciuma WRUA, established in 2007, drafted a sub-catchment management plan (SCMP). The plan includes a situation analysis of the watershed, proposed management options, and activities (see annex). Within the SCMP, activities to enhance the water quality and to ensure stable water supply were agreed on.

Problem description

The water supply within the sub-catchment is not sufficient. There is only one river as a dependable source of water. Particularly in the lower part of the catchment, people face **water scarcity**. Especially school children and women have to walk which is endowed with two rain seasons. Rain water has not been yet been long distances to access water sources. This for instance negatively affects the academic performance of the children and the productivity of household labour. The Ngaciuma catchment covers an area of 167 km^2. The population in the catchment is 60000 people of which 20000 live in the lower zone.

Objectives

The WRUA plans to regulate water activities and explore alternative sources of water, including the promotion of roof catchment **rainwater harvesting**. It is planned that roof catchment water harvesting system be installed in the catchment. As the major goal, the availability of portable water should be increased for school children and the lower catchment zone community. However the catchment utilized to alleviate the water shortage problem.
The WRUA wants to install roof catchments in 3 schools and 2 representative households within the catchment to serve as pilot projects.

Activities

The following gives a short overview about the activities according to the financial plan which is provided under section 6.

1. **Consultative meeting**
   One initial consultative meeting should be held to select 3 representative schools and 2 individual households. This meeting will be attended by representatives from school management committee, community/village leaders, social service department, and the WRUA itself.
   The meeting intends to prepare concerned parties to own the project. Furthermore, the different roles and responsibilities regarding the project will be streamlined.

2. **Installing catchments**
   The WRUA is responsible for the procurement of the necessary materials (e.g. gutters, pipes, and storage tanks) and ensures deliverance of the material to the respective sites.
   For construction of the platforms and installation of the water conveying system, skilled labourers will be hired.

3. **Maintenance**
   The project sustainability requires maintenance of the system. For this purpose, some funds shall be reserved for future repairs (e.g. spare parts) during project lifetime. Maintenance work will be performed by school administration, using school repair and maintenance funds/vote (see no. 13).

4. **Monitoring and evaluation**
   The installation technician will check the condition of all the 5 roof catchments after 6 month.
   The evaluation expert will assess how many people (i.e. school children and village community) have benefited from the rain water harvesting after one year. The expert will also provide a report to the donor.

Sustainability

By its nature, this project is a one time investment. However, the schools and the community will be enthusiastic to sustain the installations. It envisaged that other schools and the target community will imitate the water catchment idea.

Financial plan (in KSh)

A - Consultative meeting

	Item	Rate (KSh)	Quantity	Amount (KSh)	
1	Transport allowances	300	18	5,400	
2	Communication	600	1	600	
3	Daily allowances	500	17	8,500	
4	Daily allowance (person from the division)	2,000	1	2,000	
	Sub-total			**16,500**	

B - Installing catchments

	Item	Rate (KSh)	Quantity	Amount (KSh)	
5	Valley gutters in metres	200	368	73,600	
6	6 metre pipes of 4 inches diameter	5,000	8	40,000	
7	Storage tanks of 10,000 litres	40,000	14	560,000	
8	Labour - specialized (man days of work)	800	11	8,800	
9a	Labour - non-specialized (man days of work)	500	22	11,000	
9b	Labour for the construction of platforms	500	10	5,000	
10	Transport - Lorry hire (days)	30,000	2	60,000	
11	Materials for platforms per tank	14,000	14	196,000	
12	Parts (Filters, tapes, joints, etc.)	20,000	1	20,000	
	Sub-total			**969,400**	

C - Maintenance

	Item	Rate (KSh)	Quantity	Amount (KSh)	
13	Labour	500	10	5,000	
	Sub-total			**5,000**	

D - Monitoring and Evaluation

	Item	Rate (KSh)	Quantity	Amount (KSh)	
14	Transport - Monitoring expert	500	5	2,500	
15	Daily allowance	800	3	2,400	
16	Evaluation - Expert including report	10,000	1	10,000	
	Sub-total			**14,900**	

Total: 1,000, 800

Breakdown

	Category	Activity Numbers	Amounts	Percent	
A	Labour	(8, 9, 16)	29, 800	2.96	
B	Daily allowances	(3, 4, 15)	12, 900	1.28	
C	Transport	(1, 10, 14)	67, 900	6.75	
D	Equipment and Supplies	(5, 6, 7, 11)	869, 600	86.96	
E	Consumables	(2, 12)	20, 600	2.05	
	Grand total		**1,000,800**	**100.00**	

Budget justification

1. **Consultative meeting**
   It is important for the community and school leaders to travel for the consultative meeting to a particular venue and they will need to be given some money to meet cost of transport (see no.1).
   It is also important to have one expert from the division to mobilize the people and to advise the community. This person will be given a higher daily allowance than the rest of the participants. (See no. 4)

2. **Installing Catchments**
   A standard school building in the catchment area is about 40 metres by 12 metres. For three school buildings 104X3 =312 metres of valley gutters will be required. On average, the dimension of an ordinary household building is 8 metres by 6 metres, for two households we need 56 meters of valley gutters. Therefore the total length of valley gutters is 368 metres. (See no. 5). Each school building will require 2 pipes of 6 metres length to link the gutters/water to the 10,000 litres tanks. Each school requires 4 interconnected tanks (see no.7). Each private household needs one tank and one pipe. Since the water to be collected is for drinking, there is need for high quality tanks. The tanks need to be placed on concrete platforms so there is need to set aside money for platform construction (see no. 11).
   The construction of the water tank platforms will require 10 man days. This will be a contribution from the Ngaciuma catchment community (See no. 9b)

3. **Maintenance**
   The installations will be maintained by the respective school administration and households.

4. **Monitoring and Evaluation**
   After six months the installation expert will visit all the five sites in three days to ensure that installations are in good condition. The evaluation expert will be hired and paid a lump-sum to report to schools, community and the donor about the impact of the whole project. This includes the number of school children and families that benefit from this project.

Appendices

Sub Catchment Management Plan

3.3 Stakeholder Analysis

The stakeholder analysis of the water sectors focused on identifying relevant actors for catchment management at the local level that would directly or indirectly affect and/ or support activities implemented by the WRUAs in Kenya and WUAs in Tanzania.
Figure 3.2 illustrates a stakeholders' analysis of the Kenyan water sector focusing on Kinyaritha-Ngaciuma and Bwathonaro Catchments from the view of the WRUAs. WRUAs in Kenya have the direct mandate for water resources management and conflict resolution at the sub-catchment level while WRMA, the main authority for resources management and the WRUAs direct counter part, acts as an umbrella institution and directly cooperates with the WRUAs in implementing activities and generating funds. WRMA is a governmental institution located under the direct authority of the Ministry of Water and Irrigation (MWI) and acts at the national, basin as well as catchment level.

The analysis below shows that regarding activities for catchment conservation the WRUA is directly responsible in initiating activities as well as generating funds for implementation. WRMA supports and facilitates the WRUA and establishes contacts with the local government authorities and other ministerial institutions (e.g. National Environmental Management Authority (NEMA)). It also acts as a mediator between the WRUA and the water supply side of the sector such as the Water Services Board (WSB), Water Services Regulatory Board (WSRB), and larger Water Service Providers (WSPs) (e.g. the Nairobi Water Company). Water Supply Projects and WSPs, the water consumers, are required to be members of WRUAs in order to be allocated with water permits.

The Ministry of Water and Irrigation (MWI) in cooperation with WRMA and the Regional Authorities are responsible for policy formulation. Funding generally can be generated by the WRUA directly as well as through WRMA from the Water Services Trust Fund (WSTF) - they signed a MoU

to facilitate funding for WRUAs. WRMA can directly generate funds from donors such as the World Bank (WB), the German Technical Cooperation (GTZ), etc. in order to facilitate catchment management.

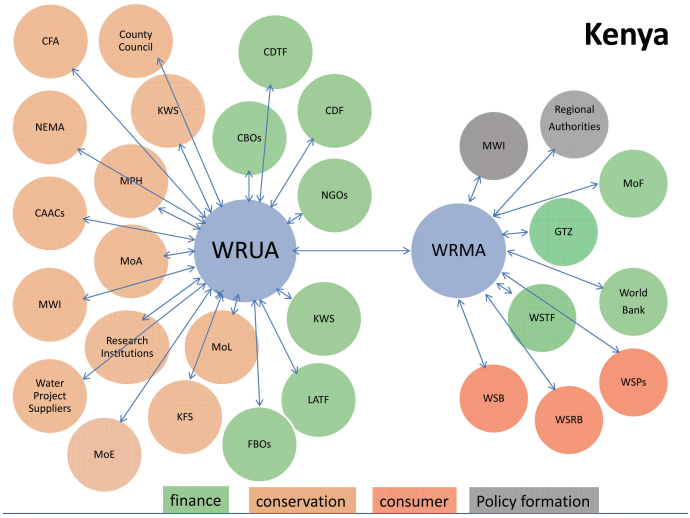

Figure 3.2: Water Stakeholder Relationships in Kenya

Stakeholders highlighted in the analysis include actors at the national, regional and local levels, whereas the ministries usually have a local representative at district level. These include the Ministries of Water and Irrigation (MWI), Agriculture (MoA), Lands (MoL), Public Health (MPH), Public Works (MPW) as well as the Kenya Wildlife Service (KWS) and the Kenya Forestry Service (KFS) - with most of whom the WRUA communicates directly. Regional Authorities (RA), e.g. Tana and Athi River Development Authority, are usually contacted through WRMA.
Local governmental institutions such as the County Council (CC) and the

Local Authority Trust Fund (LATF) are approached directly by the WRUA for funding opportunities. Other funding bodies include the Constituency Development Fund (CDF), Community Development Trust Fund (CDTF); Faith Based Organisations (FBOs) such as churches, Community Based Organisations (CBOs) such as women groups, and Non Governmental Organisations (NGOs) such as the Kenya Women Trust Fund (KWTF) can also be directly approached by the WRUA. Research institutions such as Universities (e.g. Kenyatta University), Kenya Agricultural Research Institute (KARI), etc. are also relevant for catchment conservation and directly cooperate with the WRUAs while research results are shared with WRMA.

Figure 3.3 illustrates a stakeholders' analysis of the Tanzanian water sector focusing on Kiladeda Catchment from the view of the WUA. WUAs in Tanzania are based on user organisations connected to water supply systems and do not have the direct mandate for resources management, but rather cooperate directly with the Basin Water Offices, e.g. Pangani Basin Water Office (PBWO) at the basin level. They are still in the formation process and mainly focus on water supply rather than resources management. However, similarities to Kenyan structures can be observed.
The Pangani Basin Water Office (PBWO) has the direct mandate for water resources management, conflict resolution, conservation, etc. as well as the formation of Water User Associations (WUAs) on a sub-catchment level. The WUAs will be responsible for catchment conservation, guaranteeing equitable distribution of water and will act as a direct counterpart to the PBWO as a link to the water users in future. The WUA consists of all water users (i.e. water for livestock, irrigation, domestic use, etc.) as well as water suppliers (e.g. Moshi Urban Water Authority) and builds on already existing water user catchment committees.

Although not functional yet, the WUA will have the authority to initiate activities for catchment conservation and contact the relevant stakeholders at the local level directly, but with the support of the PBWO.

The PBWO is located under the authority of the Ministry of Water and Irrigation (MoWI), but has the authority to contact other ministries directly - e.g. Ministries of Lands (MoL), Natural Resources and Tourism (MoNRT), Agriculture and Cooperative (MoAC), Finance (MoF), as well as the Drilling and Dam Construction Agency (DDCA). The PBWO can also directly generate financial support from International Donors such as the World Conservation Union (IUCN), UNDP, CARE International, Global Environment Facilities (GEF), Netherlands Development Organisation (SNV), and the ACP-EU Water Facility.

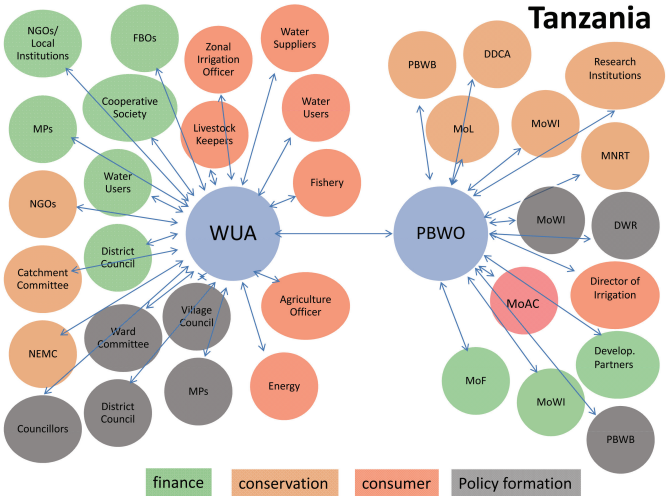

Figure 3.3: Water Stakeholder Relationships in Tanzania

Interesting to note is that the WUA as well as the PBWO seem to have the possibility to work directly with actors in all fields (i.e. conservation, generating funds, dealing with the consumers as well as policy for-

mulators) - whereas one acts at the local or district and the other at the regional or national level. For instance, at a lower level (i.e. village, ward and district level) the WUA is eligible to directly deal with the Village Council, Cooperative Societies (CS), the Ward Executive Committee (WEO), elected councillors, the District Council, the Zonal Irrigation Officer (Arusha, Kilimanjaro, Tanga), as well as the National Environmental Management Council (NEMC).
The WUA also directly deals with local NGOs (e.g. PAMOJA, TIP Faith Based Organisations (FBOs)), institutions such as schools, as well as research institutions such as universities (e.g. University of Dar es Salaam, Sokoine University of Agriculture). The WUA seems to act as the direct counterpart of consumers such as "Energy", which stands for the country wide electric company called TANESCO, Agricultural Sector, and other water stakeholders.

Overall, it can be observed that regarding conservation activities as well as generating funds for activities from local or regional sources the WRUAs as well as the WUAs can act relatively independent from the WRMA and the PBWO. However, on a higher level both associations need the assistance or facilitation of the WRMA or the PBWO.

3.4 Profiles of selected Donor Agencies

This section focuses only on international donor agencies that support water-related activities in Eastern Africa. The list is only a guide hence it is not exhaustive. The selection does not reflect the importance of the donor agencies, but the degree of acquaintance among the participants of the Summer School.

3.4.1 International Donor Agencies

AFRICAN DEVELOPMENT BANK / AFRICAN WATER FACILITY

Overview

The African Water Facility (AWF) was set up as a special fund, managed by its host institution, the African Development Bank (AfDB). As such AWF works under special conditions allowing it to perform fast and efficiently. Its operations are governed by the Operations Procedures approved by the Board of Directors of the AfDB on 19 October 2005, which define the eligibility criteria for AWF financing. A project submitted for financial support by the Facility must fall into one or more of the areas of intervention and focus defined by the Governing Council. Available grants range from Euro 50,000 to a ceiling of about Euro 5,000,000.

Areas of Intervention

AWF focuses its operational support for the attainment of the following main strategic objectives and corresponding outcomes at national and regional levels:

- Strengthen water governance
- Investments to meet water needs
- Strengthening the financial base
- Improve water knowledge

Recipient Eligibility

The recipients include:

- Central or local African Governments and municipalities
- Non-Governmental Organizations (NGOs) and Community-Based organizations (CBOs) or civil society organizations

- Regional, sub-regional and sectoral organizations such as Regional Economic Organizations (REOs), River Basin Organizations (RBOs), etc.
- In order to decide upon the eligibility of NGOs and Civil society organizations, they need to fulfil the following criteria demonstrating their credibility and track record in the water sector
- Be a NGO committed to the continent's or national development priorities and that the proposed activities will be implemented in Africa
- Be Africa-based or provide evidence of partnership with African institutions
- Provide evidence of currently valid legal registration
- Have appropriate organizational and management capacity
- Show the existence of a sound financial system
- Provide evidence of competence to carry out proposed activities
- Demonstrate credibility, knowledge of local values, networks and structures required to carry out the indicated activities
- Have their proposals supported by the national government (letter signed by the appropriate official of the government, at the Ministerial level, indicating that the country supports the request as being consistent with national priorities). This letter must be sent together with the application for support.

Project Eligibility

To be eligible for financing under the AWF, proposed activities and projects must fall into one or more of the areas of intervention. All the projects financed by the Facility should have clear performance indicators with good expected outcomes and clear targets. In considering a request for financing, due consideration is given to the following criteria:

- Political commitment of the country as demonstrated by a clear indication of the importance accorded to the water sector.
- Consistency with national priorities and regional consensus.
- Credibility, ownership, and commitment of the beneficiary.
- Effectiveness and sustainability of the institutions and investments.
- Opportunity for effective implementation.
- Good expected outputs with clear indicators and well defined targets.

Application Process

- Under the demand driven approach, potential beneficiaries submit unsolicited proposals to the AWF for consideration. Under the thematic approach, competitive calls for proposals will be issued and projects which best meet the stated terms of reference and eligibility requirements will be selected for funding.
- In addition to falling under one or more of the AWF areas of intervention under meeting water needs, desirable water investment projects should:
- Offer a clear indication that they will serve to catalyze larger investments from other donors or the private sector
- Focus on innovation and change through the introduction and piloting of new or improved technologies or implementation of new approaches
- Have a strong focus on knowledge generation and dissemination.

The completed form(s) are sent to: africanwaterfacility@afdb.org

THE WORLD BANK

Overview

The World Bank offers a limited number of grants to assist development projects, grants that are designed to encourage innovation, co-operation between organizations and to increase local stakeholders' participation in projects. Some grants are funded from the bank's administrative budget and are funded directly. The bank also administers or manages other grant funds for donors through partnerships and trust funds. All grant funds are housed under the Development Grant Facility (DGF), established in 1997 to integrate the overall strategy, allocations, and management of Bank grant-making activities funded from the Administrative Budget under a single umbrella mechanism. All grants must meet sector and institutional priorities, be of high quality, and conform to DGF eligibility criteria.

Areas of focus (thematic areas)

The programs should:

- Galvanize partners to agree on priorities and measurable goals.
- Share work among partners to leverage scarce resources and seize the advantage of economies of scale.
- Coordinate with partners to ensure adequate financing in critical areas and geographic coverage.
- Address externalities through best practices, research, capacity building, knowledge sharing, advocacy and other services.
- Give a voice to developing countries in program governance.

Objectives and eligibility criteria

- Encourage innovation through provision of seed money and support for cutting edge approaches.

- Catalyze partnerships through convening and building coalitions, and raising funds.
- Broaden Bank services and increase the effectiveness of country programs and projects.

Eligibility criteria for DGF programs

- Further the Bank's development objectives but not compete with regular Bank instruments.
- Operate where the Bank has a distinct comparative advantage and not replicate the role of other donors.
- Encompass multi-country benefits or activities not appropriate to undertake at the country level.
- Reinforce partnerships with key players in the development arena.
- Provide significant leverage for generating financial support from other donors.
- Have a record of achievement and financial probity.
- Have an arms-length relationship with the Bank's regular programs.
- Have an explicit disengagement strategy tailored to its individual circumstances

Application Procedure

Programs requesting grants through the Development Grant Facility (DGF) are reviewed against the Board-approved eligibility criteria available at: http://www.worldbank.org/dgf

GLOBAL ENVIRONMENT FACILITY

Overview

Global Environment Facility (GEF) is an independent financial organization. GEF provides grants to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities.

Areas of focus (thematic areas)

- The GEF funds projects in six focal areas:
- Biodiversity
- Climate change
- International waters
- Ozone depletion
- Land degradation
- Persistent organic pollutants

Eligibility Criteria

- Any eligible individual or group may propose a project, which must meet two key criteria:
- It must reflect national or regional priorities and have the support of the country or countries involved, and
- It must improve the global environment or advance the prospect of reducing risks to it. GEF project ideas may be proposed directly to UNDP, UNEP, or the World Bank.
- Country eligibility to receive funding is determined in two ways.

- Developing countries that have ratified the relevant treaty are eligible to propose biodiversity and climate change projects.
- Other countries, primarily those with economies in transition, are eligible if the country is a party to the appropriate treaty and is eligible to borrow from the World Bank or receive technical assistance grants from UNDP
- More information is available at: http://www.gefweb.org/Operational_Policies/Eligibility_Criteria /eligibility_criteria.html

THE EUROPEAN COMMISSION (EC)

The European Union, composed of the Member States and the European Commission, is the world's biggest aid donor. The Commission's EuropeAid co-operation office manages EU external aid programmes and ensures that development assistance is delivered worldwide. EuropeAid is the Directorate-General of the European Commission that is responsible for implementing external aid programmes and projects across the world. It works closely with EU neighbouring countries, Russia, the African, Caribbean and Pacific (ACP) regions, Latin America and Asia. EuropeAid aims to deliver development aid in an efficient and effective way. The focus is on maximising the value and impact of aid funding by making sure support is provided in a speedy and accountable fashion. EuropeAid is responsible for all the steps of an aid delivery project: after identifying needs, it carries out feasibility studies and prepares all the necessary financial decisions and controls. It then moves on to drawing up the required tendering, monitoring and evaluation procedures. When implementing projects, EuropeAid takes account of EU strategies and long-term programmes for the delivery of aid. These strategies and related policies are designed by other directorates-general of the European Commission, including DG Development for the ACP regions and DG External Relations for the other regions and countries of the world. EuropeAid's main

mission is to implement the Commission's external aid instruments, both those funded by the Union's budget and the European Development Fund. http://ec.europa.eu/europeaid/index_en.htm

The **European Development Fund (EDF)** is the main instrument for the European Community aid for development cooperation in the African, Caribbean and Pacific (ACP) States and the EU's Overseas Countries and Territories (OCTs).

Areas of focus

It finances projects or programmes which contribute to the economic, social or cultural development of the respective countries. The aid granted to ACP States and OCTs will continue to be funded by the EDF, or at least for the period 2008-2013. The 10th EDF was concluded for the period 2008-2013 covering a total budget of 22.7 billion EUR.

The **Seventh Framework Programme for Research and Technological Development (FP7)** is the EU's main instrument for funding research projects in Europe. FP7 brings together all research-related EU initiatives under one scheme for the period 2007-2013. The FP7 programme has a total budget of over 50 billion EUR for the period 2007-2013.

Areas of Focus

The extensive objectives of FP7 have been grouped into 5 Specific Programmes:

- Cooperation
- Ideas
- People
- Capacities
- Nuclear Research

The core of FP7 is the Cooperation Programme that encourages collaborative research initiatives across Europe and other partner countries. Research will be carried out on 10 key themes - one of them being Environment (including climate change).

Eligibility

- Research groups at universities or research institutes
- Companies intending to innovate
- Small and medium-sized enterprises (SMEs)
- Public or governmental administration (local, regional or national)
- Early-stage and experienced researchers (third countries' nationals included)
- International organizations
- Civil society organizations.

Contact Email: fp7@cordis.lu

WORLD WIDE FUND FOR NATURE

Overview

Environmental Fund for Nature (EFN) is financed through World Wide Fund for Nature (WWF). EFN funds can be used to cover any costs directly associated with training workshops, including room rentals, travel expenses, accommodations, transportation, materials, and other related costs. Administrative costs are limited to 15 percent of the overall budget. EFN funds cannot be used to cover organizational overhead, purchase of equipment, pre-workshop research, etc. Grants are limited to $7500.

Eligibility criteria for funding

- The organization must have an established presence in an eligible country.
- Proposed training and capacity building activities must provide skills and knowledge to groups that will help advance conservation in an eligible country.
- Training must take place within six months of submission of the application.
- Organizations are limited to one EFN Conservation Workshop Grant every two years.
- Priority will be given to organizations working in WWF priority ecoregions

Application Procedure

- Submit a completed application form (part I), a detailed proposal (part II), a detailed budget (part III), and a signed acceptance agreement (part IV).
- Applications should be submitted by email: efn@wwfus.org or mail to: Education for Nature, World Wildlife Fund, 1250 24th Street, NW, Washington, DC 20037, USA.
- More information is available at: http://www.worldwildlife.org/science/fellowships/train /WWFBinaryitem9134.doc

NORDIC DEVELOPMENT FUND

The Nordic Development Fund is a multilateral development financing institution funded by Denmark, Finland, Iceland, Norway and Sweden. It supports development projects in low income countries, specifically it has a long term cooperation with the following African countries: Benin, Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Rwanda,

Senegal, Tanzania, Uganda, Zambia.

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)

Overview

As an international cooperation enterprise for sustainable development with worldwide operations, the federally owned Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH supports the German Government in achieving its
development-policy objectives. It provides viable, forward-looking solutions for political, economic, ecological and social development in a globalised world. Working under difficult conditions, GTZ promotes complex reforms and change processes. Its corporate objective is to improve people's living conditions on a sustainable basis.
GTZ is a federal enterprise, founded in 1975 as a company under private law. The German Federal Ministry for Economic Cooperation and Development (BMZ) is its major client. The company also operates on behalf of other German ministries, the governments of other countries and international clients, such as the European Commission, the United Nations and the World Bank, as well as on behalf of private enterprises. GTZ works on a public-benefit basis. All surpluses generated are channelled back into its own international cooperation projects for sustainable development. GTZ is operating in 41 countries in Sub-Saharan Africa. GTZ is currently supporting the programs within the water sectors in Kenya and Tanzania.

Areas of focus (thematic areas)

GTZ is increasingly being contracted to work in Africa by other German Ministries. On behalf of the Federal Foreign Office, for example, it is operating in the fields of governance, as well as peace and security, while under a contract awarded by the Federal Ministry for the Environment (BMU) it is dealing with energy and climate issues. Projects are often suited to supporting inter-ministerial goals.

Application Procedure

The criteria to be met by the project and the application are set out in extensive guidelines and manuals. The project aim, the intended project measures and anticipated results must be described in precise detail, alongside a description of the required personnel resources and the co-financing structure. NB: Since competition for funding is fierce, successful project applications must not only satisfy all formal criteria but also have a convincing concept and content. More information is available at:
http://www.gtz.de/en/weltweit/571.htm

SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY - SIDA

Sida's objective is to help create conditions that will enable the poor to improve their lives. Natural Resources and the environment is one of the several fields of actions and include Biological diversity.

Eligibility

SIDA specifically allocates funds to support the operations of charities and non-governmental organisations in developing countries. The principal requirement is that an NGO must co-finance at least ten per cent of the total sum for a project or programme.

PRINCE ALBERT II OF MONACO FOUNDATION

The Prince Albert II of Monaco Foundation acts as an accelerator of projects and solutions for the environment. It supports and develops initiatives in the fields of research and studies, technological innovation and socially-aware practices.

Areas of Focus

The three main areas are:

- climate change

- biodiversity
- water

Eligibility

The financial support is open to any type of private or public organisations, with no size nor geographical conditions. However, co-financing is required.

CARE International

Areas of focus (thematic areas)

- Agriculture and Natural Resources
- Water
- Health (including HIV/AIDs) and Nutrition
- Emergency relief
- Education
- Economic Development (Source: http://www.care.org)

BILL AND MERINDA GATES FOUNDATION

Areas of focus

- Global Development Funding Priorities: Agricultural Development, Water, Sanitation, etc
- Global Health Funding Priorities: Diarrhoea, HIV/AIDS, Malaria, etc

Eligibility

The foundation makes most of its grants to U.S. tax-exempt organizations

that our staff independently identifies. A small percentage of grant making occurs through Requests for Proposals (RFPs). The foundation does not make grants to individuals.

FONDATION ENSEMBLE

'Fondation Ensemble' is a private state approved humanitarian foundation. At the international level, projects are implemented in the following fields:

- Water and sanitation (65%)
- Sustainable development (21%)
- Animal biodiversity (14%)

Eligibility

Foundation Ensemble provides two funds:

- The Programme Fund - there is a minimum of 50% co-financing and the project duration is required to be a minimum of 2 years.
- The Small Grants Fund- focuses on shorter term actions and co-financing is not needed.

Application

For both funds, project proposals can be submitted all year round.

3.4.2 Donors with Focus on Kenyan Water Sector

LOCAL AUTHORITIES TRANSFER FUND

Is a trust fund for local authorities or municipalities in Kenya. It is financed by revenue from income tax. At the national level, the funds are disbursed according to the relative population size. They finance all development projects within their municipality e.g. roads, schools water

projects etc. A local committee outlines the local priorities for funding.

CONSTITUENCY DEVELOPMENT FUND

It is a fund provided by the Kenyan Government to the constituencies to support development projects at the local level e.g. roads, schools water projects etc. Normally it comprises of 2.5% of the total government revenue. It is allocated equally to constituencies based on the poverty index. The finances are managed by four committees:-2 at the national and 2 at the local level. To benefit from the fund, a proposal, written according to the CDF format, has to be submitted to the local CDF committee. The committee evaluates the proposal and makes a decision based on the priorities of the location. For a project to be funded, it must be implemented in the constituency where the application is made. Proper accounting of the resources is mandatory.

COMMUNITY DEVELOPMENT TRUST FUND

Is a social development fund financed by the European Union, Danida and the Government of Kenya. They finance projects focusing on social improvement, environmental sustainability and capacity building. To access the funds, a high quality proposal is submitted on forms provided by the District Development Officer. A committee at the District level evaluates the proposal and visits the site where the said project is to be implemented. Successful projects get 75% financing while the community contributes the remaining 25% either in cash or in kind.

COMMUNITY BASED ORGANIZATIONS

In addition to the above, water projects in Kenya are also financed by other community based organizations such as church organizations. They are normally formed on a voluntary basis. In some cases, members agree to contribute a certain amount of money on a regular basis to support a given

project. Occasionally, members invite people living in their community for what is referred to as *harambee* (meant to bring resources together for a common goal) to mobilize support in cash or in kind eg. digging a trench.

NON GOVERNMENTAL ORGANIZATIONS

Several Non-Governmental Organizations (NGO), both local and international, also play a big role in water related activities. For instance, some support capacity building by financing the design and installation of billboards displaying information aimed at creating awareness in conservation related activities, or provision of tree seedlings for reforestation. An example is the Green Belt Movement in Kenya.

GOVERNMENT BODIES (KENYA)

Various government ministries like Agriculture, Environment, research institutions etc. cooperate with WRUAs to implement water-related activities.

3.4.3 Donors with Focus on Tanzanian Water Sector

INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES (IUCN)

Areas of focus

IUCN, the International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. It supports scientific research, manages field projects all over the world and brings governments, non-government organizations, United Nations agencies, companies and local communities together to develop and implement policy, laws and best practice.

IUCN NATIONAL COMMITTEE OF THE NETHERLANDS

Areas of Focus Grants Programme:

- To mainstream ecosystem and biodiversity management in production environments, aimed at securing livelihoods of the rural poor;
- To strengthen ecosystem and biodiversity conservation for future generations;
- To create an enabling environment at local, national and international levels for objectives 1 & 2 above.

Eligibility

This fund is open to local NGOs as well as community-based organisations with an established commitment towards the protection of ecosystems and the sustainable use of natural resources. The eligible countries depend on each call for proposal. Website www.iucn.org

GOVERNMENT FUNDING (TANZANIA)

All WUAs in Tanzania are under the umbrella of the village government. The village in which the WUA is located initiates project proposals including those from those related to or originating from members of WUA. The proposed projects are discussed and prioritized by the Village Council. The prioritised projects are submitted to the Ward Development Committee (WDC) for prioritization and forwarding recommendations to the District Council. The District Council discusses all the submitted proposals and forward them to the respective Ministry (Ministry of Water and Irrigation, Ministry of Agriculture, Ministry of Natural Resources and Tourism etc) for budgeting. All budgets are submitted to the Ministry of Finance. The Ministry of Finance submit ministerial budgets to the Parliament for approval. Approved funds are disbursed by the Ministry of Finance through the respective ministries down to the respective district

council and then the targeted project area (village).

CO-OPERATIVE SOCIETIES HAVE BEEN FINANCING VILLAGE COUNCILS

There is still a weak involvement of the cooperatives in financing villages.

MEMBERS OF PARLIAMENT

Basically a member of parliament (MP) is not a donor though some members of parliament have been supporting certain development activities in some villages including those which can benefit the WUAs. However, a Constituency Development Fund was recently approved by the parliament in July 2009. The fund will be used for development projects in a given constituency. Registered WUAs would be able to access such funds. However, the mode of operation of such funds is not yet in place.

FAITH BASED ORGANIZATION

These organizations assist financing developmental activities at village level. The type of support depends on the village needs. Examples of Faith based organizations which support village development programmes are World Vision, Caritas-Tanzania, ADRA, etc. These sources are often a one-time support.

NGOs

A number of NGOs are involved in supporting village activities including those which are related to the water sector. Examples of such NGO operating within the Pangani Basin are PAMOJA Trust Fund, Ingeniers Sans Frontier (ISF), COMPACT. These organizations are linked to respective villages where WUAs are operating, through the Basin Water Office or

District councils. The type of activity to be funded, the level of funding and the duration of the project are mainly determined by the NGO and the District Council / Pangani Basin officials. The executing communities mainly participate in the implementation.

DEVELOPMENT PARTNERS

These are countries which have signed bilateral agreement with the Government of Tanzania. Funds from respective countries are channelled through their own agencies such as GTZ for Germany, DFID for UK, US Aid for USA, DANIDA for Denmark, NORAD for Norway, SIDA for Sweden, CIDA for Canada, JICA for Japan etc. The money is put in a common basket fund in the Ministry of Finance and Economic Affairs under the administration of the World Bank. This type of funding is meant for developmental programmes. Such funds constitute an important component in the annual national budget. Disbursement of the funds is channelled to respective basins through the respective executing ministries. The targeted projects can either be initiated at the village level and subsequently channelled through the District Council to the relevant ministry, or initiated from the Basin Offices directly channelled to the Ministry of Water and Irrigation for funding.

OTHERS

In addition to the above, water projects in Kenya and Tanzania are also financed by other community based organizations such as church organizations.

4 Appendix

4.1 Payment for Environmental Service - by Mwangi Gathenya

Requirements for PES

PES schemes are built on the premise that there are cause-effect relationships between land use and watershed functions. The establishment of a PES scheme in a watershed therefore starts with identifying how land use and land management in the upstream areas affects water quantity and quality downstream. PES schemes should be pro-poor (benefit the poor without harming the rich), voluntary (willing buyer, willing seller), conditional (buyer pays for services that are provided by seller) and realistic (the ecosystem services are clearly understood). PES systems must be designed in such a way so as operate independently of external financial resources after a previously determined period. Monitoring is essential for the smooth operation of a PES scheme. It must include the establishment of a base line, as well as the socio-economic and environmental impact of the project. Although PES schemes can be strengthened by establishment of relevant institutional, legal and policy frameworks, the lack of a specific legal framework for PES is not a crucial obstacle to create a market.

In any watershed that is being targeted for PES, there should be **at least one potential buyer of ES downstream, and at least one seller or provider upstream**. Possible buyers include water supply companies, hydropower companies, commercial irrigation farms, food and beverage industries and fisheries industries. Sellers are most often rural farmers living upstream whose activities influence quality or quantity of water delivered downstream. For PES to work there should be a socio-economic gradient whereby the sellers upstream are generally poorer than the beneficiaries downstream. Since these conditions cannot always be satisfied, PES is not applicable everywhere.

PES in IWM

Political actors, decision makers and watershed managers are increasingly aware of the capacity of PES schemes to mobilize local financial resources through a direct provider-user relationship, and they increasingly recognize the enormous achievement represented by putting ecosystem services at the centre of natural resource management.
PES systems present a series of advantages and opportunities which make them a promising mechanism to improve the conditions of water resources in watersheds since they can:

- Generate new sources of funding to conserve, restore and value watershed resources.
- Be used for sensitizing the participating population about the value of watershed services.
- Facilitate the solution to conflicts and the obtaining of consensus among the upstream and downstream communities.
- Improve efficiency in the allocation of natural, social and economic resources.
- Transfer resources to socially and economically vulnerable sectors, which offer environmental services.

The following difficulties stand in the way of PES implementation:

- There may not be sufficient empirical evidence linking specific land uses to ecosystem services hence little support by buyers and sellers. Moreover, knowledge gained from experiments in one site may not be directly transferable to another site. In some cases, the general public even believes in myths that have no scientific basis.
- PES schemes may not be the most cost-effective method to attain desired watershed management goals.

- Most 'would be' buyers may already be paying relevant taxes and therefore may regard PES as an added burden.
- The service providers, users and the service itself may not be properly identified.
- PES schemes may offer an opportunity for potential sellers to harm the environment in anticipation of future rewards.
- PES schemes may depend, at least initially, on external financial resources.
- Potential providers and buyers of ecosystem services may be unaware of PES opportunities.
- There is also a lack of national technical expertise for designing PES projects, establishing appropriate economic value, and monitoring and evaluating PES schemes.
- At the moment policy, regulatory and institutional frameworks that would support PES are generally under-developed. The private sector should provide legal, financial, insurance, business management support and advisory services, credit and ME services to support PES.
- Lack of security of land tenure may hinder implementation of long term land use improvements

Although not applicable everywhere, PES schemes may provide a win-win situation where poorer upland ecosystem service providers get an alternative income stream and downstream beneficiaries reduce their production costs and/or risks. There is room to explore new opportunities to implement PES in Africa. The opportunities will continue to increase as the population pressure stretches the water resources.

References

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4.2 Sub-Catchment Management Plan Kinyarita - Ngaciuma 2008

No	Intervention	Sub-No	Activities	Indicators	Time Frame	Means of Verification	Responsibility (Actors)	Assumptions
1. Lack of Awareness on the Water Sector Reform	Create Awareness on Water Demand Awareness creation on irrigation efficiency Awareness creation on equitable distribution Awareness creation on Water resource management Awareness creation on Seasonal Variability Monitoring of Awareness creation Awareness is seen	1.1	Conducting workshop	Two workshop for 50 stakeholders each conducted	By Aug. 2009	List of participants Report on workshop	WRUA and facilitated by WRMA	Assistance by WRMA Community is willing to participate
		1.2	Inform the public through chief barazas	Present WRUA activities in one chief baraza per month	By Aug. 2009	Records from the chief WRUA report verified by the chief	WRUA Provincial Administration	Provincial Administration is willing to cooperate with WRUA
		1.3	Prepare Posters for WRUA activities	One master poster developed and printed	By Feb. 2009	Site Visit Poster showing WRUA activities	WRUA WRMA Public works	Permission from public works Funds are available
		1.4	Information distribution through school parents day meetings	Three WRUA presentations during school parents day meetings	By Aug. 2009	Parents teacher's associations report	WRUA Head teachers	Teachers are cooperating
		1.5	Information dissemination through churches, mosques and related institutions as well as social gatherings	Perception of WRUA increased	Every week	List of receipients	WRUA	Funds are available Cooperation of institutions

	as a ongoing process. Above themes will rotate from session to session. Note : A list of topics for above themes is attached to the plan	1.6	Information distribution through local media (Muga FM)	Information materials developed	June 2009	Radio broadcasts programme once a week	WRUA committee members	Committee members will cooperate
		1.7	Information sharing through Meru Agricultural Show	One presentation of WRUA activities in Meru Agriculture Show	By June 2009	Photographs Certificate of participation Letter requesting participation Display of map	WRUA WRMA ASK	Funds are available Cooperation by WRMA and ASK
		1.8	Prepare a Video/DVD documentary on WRM	One documentary developed	By Nov 2009	DVD	WRUA WRMA DAAD Alumni	Funds are available
		1.9	Capacity building of WRUA committee members on finance, proposal writing and data collection	One training workshop conducted for 25 participants	By Dec. 2009	Certificates Report from workshop by participants Workshop proceedings	WRUA WRMA	Funds are available
2. Illegal Abstraction / Over-Abstraction	Assistance in Enforcement of the Law	2.1	Identify unregistered water abstractions and over-abstractions	Reduced number of illegal abstraction by 30%	By Aug. 2009	Permits issued WRUA report	WRMA WRUA	Co-operation by the community
		2.2	Merging of individual pipelines (new)	50% of individual pipelines merged and metered	By Nov 2009	Water permits WRUA report	WRMA WRUA	Cooperation by members
		2.3	Encourage group projects for better management of the resources	10 water projects registered	By Nov 2009	Permits issued	WRUA WRMA	Community co-operation No conflicts of interest
		2.4	Exposure visit to the catchment during the dry season	Two inter-zonal exposure visits of 25 WRUA members conducted	By Nov 2009	Documentation of the visit	WRUA	Funds available Community cooperation
3. Encroachment of Wetlands, Springs and Rivers	Rehabilitation and sustainable utilisation of the wetlands	3.1	Promote alternative farming methods outside the wetlands, e.g. agroforestry, zero-grazing, bee-keeping	10% of land owners consent on the sustainable use on the wetlands 5 farmers have left the wetlands	By Aug. 2009	Site visits Interviews with the community	WRUA WRMA	Land owners are willing to change Technical expertise available
		3.2	WRUA recommends for reclamation of wetlands and compensation of land owners	2 Reports on recommen-dation for two sites received by WRMA	By Aug. 2009	WRMA Files Done but no reclamation	WRUA committee members	WRUA has the means
		3.3	Live fencing of wetlands	1 wetland live fenced	By Aug. 2009	Site visits Photographs	WRUA WRMA	Funds are available Stakeholder co-operation
4. Water Use Conflicts	Establish and implement procedures for water conflict resolution	4.1	Carry out an inventory of all abstractions	One abstraction report with users compiled	By June 2009	Report of names of community members and permits	WRUA WRMA Local administration	Funds available Cooperation from abstractors
		4.2	Develop allocation plans for water use	One allocation plan developed for water use	By Nov 2009	Report and plan showing the allocation for all water users Points of water use conflict identified on plan Report of meeting for plan making	WRUA WRMA Abstractors Local administra-tors	Funds available Cooperation of all stakehol-ders

		4.3	Implementation of allocation plans	Reduced numbers of reported complaints at WRUA and WRMA	By Aug 2009	Site visits to area with master meters Reports from WRUA/ WRMA	WRUA WRMA Abstractors	Cooperation from abstractors Funds available
5. Water Pollution	Enhance water quality in the water sources and prevent water pollution	5.1	Establish waste bins at market centres and identify a dumping site for burning and composting	Five waste bins at Kauthene market centre established and one dumping site is operational	By Aug. 2009	Site visit Report from market committee	WRUA Local Authority Market committee NEMA Public Health	Cooperation from the local authority and NEMA Funds available
6. Human-wildlife conflicts	Enhancing managementof human-wildlife conflicts	6.1	Strengthening the partnership of KWS with community (fence committee)	Number of incidences when elephants come out of the forest are reduced by 50%	By Augt 2009	Records from WRUA, fence committee and KWS	WRUA KWS Fence committee	Cooperation
7. Erosion of Riverbanks and Roadsides	Riverbank protection and Roadside protection	7.1	Establish demonstration sites for river bank protections	Two demonstration sites established One group of 20 non-committee members visited the demonstration plots	By Dec. 2009	Site visits Photographs	WRUA WRMA NEMA MoA	Funds available
		7.2	Delineation of the riparian land	5 km along the rivers are delineated	By Aug. 2009	Site visit and report	WRUA WRMA	Co-operation of land owners
		7.3	Promote regeneration of vegetative cover along the river bank	1 km river bank is covered by water-friendly vegetation	By Aug. 2009	Site visit and report	WRUA WRMA Forest Dept.	Co-operation of land owners
		7.4	Report to Roads Department to construct adapted measures along the road	2 reports submitted to the Roads Department	By March 2009	Report Site visit	WRUA Roads Dept.	Co-operation by Roads Dept.
8. Deforestation	Promotion of appropriate management of forest and tree resources in the zone	8.1	Strengthen partnership between Community Forestry Association (CFA) and WRUA	MoU/MoA signed between WRUA and CFA on conservation of forest and water resources	By Aug. 2009	MoU/MoA between partners	WRUA KFS CFA WRMA	Cooperation
9. Inefficient Irrigation Systems	Efficient Utilisation of Water	9.1	Enforce permit conditions (promote use of water meters)	Installation of 10 water meters on major water abstractors	By Nov 2009	Inspection reports Site visit	WRUA WRMA	Cooperation of project owners to install meters
		9.2	Facilitate meetings on better irrigation methods like overhead and drip irrigation	2 training meetings held on model farms	By Nov 2009	Minutes of the meetings Improved water use	WRMA MWI DAO WRUA	Other stake-holders co-operate
		9.3	Promote usage of standard pipes	30% pipes networks standardised	By Nov 2009		WRMA	
10. Increasing Eucalyptus Coverage	Reduction of eucalyptus coverage and increase of economic and water friendly trees acreage	10.1	Establish water friendly and income generating tree nurseries	Five nurseries established on private farms	By Aug. 2009	Financial reports of the number of trees sold in the nurseries	WRUA Farmers CFA	Willingness of farmers Funds are available
		10.2	Encourage partnership with CFA	Co-opt CFA committee member in WRUA meetings	By Aug. 2009	Minutes of WRUA meetings	WRUA CFA	Cooperation

11. Riverbank cultivation/clearing	Sensitize/ create awareness on riverbank conservation Establish riparian land boundary Establish inventory of riparian land owners Protect and restore the riparian zone (e.g. vegetation)	11.1	Planning for inventory exercise	Two stakeholders' meetings to decide on inventory methods	Oct. to Dec. 2009	List of participants Report of the meetings	WRUA WRMA	WRMA will facilitate and coordinate stakeholders
		11.2	Identification of riparian land owners and existing riverbank conditions	One field assessment along riverbanks conducted	By Aug. 2009	List of riparian land owners Report on the status of the riverbank Site visit	WRUA WRMA	WRMA will facilitate and coordinate stakeholders
		11.3	Delineate the extent of riparian area as per water act	5 kilometres length of the river delineated	By Aug. 2009	Existence of blue pegs along the riverbank	WRUA WRMA	WRMA will facilitate and coordinate stakeholders
		11.4	Characterize the vegetation along the riverbank	5 kilometres length of the riverbank vegetation identified and classified into water friendly and unfriendly	By Aug. 2009	List of water friendly and unfriendly trees and other vegetation along the riverbank	WRUA WRMA KFS Riparian land owners	KFS will backstop and coordinate the exercise Cooperation of the land owners
		11.5	Regulate agricultural activities along the riverbank	5 kilometres length of the riverbank vegetation cover regenerated	By Aug. 2009	Site visit	WRUA WRMA KFS	KFS will backstop and coordinate the exercise
		11.6	Promotion of water friendly trees	One tree nursery of water friendly tree species established	By Aug. 2009	Site visit and documentation	WRUA WRMA KFS KEFRI	KFS will backstop and coordinate the exercise

12. Soil Erosion	Promote soil conservation on steep slopes	12.1	Enforcing the Agricultural Act concerning cultivation on steep slopes	10% of the affected farmers comply	By Aug. 2009	Site visits Report from MoA	WRUA MoA WRMA NEMA	Cooperation Funds are available
		12.2	Identifying endangered sites and report to WRMA	One written report by WRUA to WRMA	By Aug. 2009	Report from WRUA	WRUA WRMA	Willingness of WRUA
13. Gully Erosion	Establish gully control and rehabilitation	13.1	Capacity building on methods of gully erosion control and rehabilitation Rehabilitate gully at Mukundu	One demonstration site for control and rehabilitation of gully erosion established at Mukundu	By March 2009	Site visit List of participants in the demonstration activities	WRUA Ministry of Agriculture WRMA KFS NEMA Public works	Ministry of Agriculture will facilitate and coordinate stakeholders
14. Dependence on One Stream (Lower Zone)	Regulate water activities and explore alternative sources of water	14.1	Analysis of extent of abstraction	One inventory of all abstractors conducted	By Aug. 2009	Record of abstractors	WRUA WRMA Provincial administration	People will cooperate
		14.2	Enforcement of permits conditions	50% water abstractors have applied for permit	By Aug. 2009	Application records	WRUA WRMA	People will cooperate
		14.3	Promote rainwater harvesting	5 roof catchments established at private households and schools	By Nov. 2009	Site visit Roof catchments established Ongoing in 3 schools	WRUA WRMA Ministry of Education	People will cooperate

		14.4	Promote roadside water harvesting	5 roadside water harvesting ditches established	By Aug. 2009	Site visit Ditches established	WRUA WRMA Ministry of Roads and Public works	People will cooperate
		14.5	Promote exploitation of ground water	One borehole/ well to be sunk	By Aug. 2009	Authorization documents Borehole/ well sunk	WRUA WRMA NEMA	Ground Water is conducive for domestic and agricultural use
15. Water Wastage	Promote efficient distribution and use of water	15.1	Enforce permit conditions (promote use of water meters)	Installation of 10 water meters on major water abstractors	By Aug 2009	Inspection reports Site visit	WRMA WRUA	Cooperation of project owners to install meters
		15.2	Carry out an inventory of all abstractions	One abstraction report with users compiled	By Dec. 2009	Report of names of community members and permits	WRUA WRMA Local administration	Funds available Co-operation from abstractors
16. Lack of Firewood (Upper Zone)	Alternative energy saving technologies for cooking and heating in households promoted	16.1	Encourage alternative energy saving sources for solar water heating and improved cooking stoves	Three private homes have adopted energy saving alternatives	By Aug. 2009 3 are using ongoing	Site visits and interview with the community members	WRUA WRMA	Cooperation and willingness of community
		16.2	Encourage households to use biogas (Ecosan)	Ecosan project started in school	By Aug. 2010	Site visit	WRUA WRMA/GTZ	Cooperation and willingness of the community Funds available
17. Forest Destruction (Upper Zone)	Appropriate management of forest and tree resources in the zone are promoted	17.1	Encourage agroforestry (fodder, trees)	Three private farms establish improved form of agroforestry on their land	By August 2009	Site visits to the three farms Photographs of before and after scenario Awareness there but not through WRUA	WRUA MoA Local Administration WRMA KFS	Cooperation
		17.2	Strengthen partnership between Community Forestry Association (CFA) and WRUA	MoU/MoA signed between WRUA and CFA on conservation of forest and water resources	By Aug. 2009	MoU/MoA between partners	WRUA KFS CFA WRMA	Cooperation

List of ranked subjects for awareness creation

1. Illegal abstraction / over-abstraction
2. Gender Equity
3. Encroachment of wetlands
4. Metering, maintenance of pipe lines, for efficient water use
5. Need for water allocation and planning
6. River bank protection and conservation

7. Water sector reforms
8. Impact of eucalyptus on water resources
9. WRUA activities (to inform people)
10. Soil and water conservation and gully rehabilitation
11. Appropriate farming practices including irrigation techniques
12. Sustainable use of wetlands
13. Importance of forests in water resource management
14. Composting, solid waste disposal and positioning of pit latrines
15. Safe use of agrochemical

5 Programme, List of Participants, References

Date	Time	Activity	Responsibility
13.09.		International and national travel to venue	CICD
14.09.	09:00 - 10:30	Opening and self introduction	SUA - Kilasara
	10:30 - 11:00	Tea Break	
	11:00 - 12:30	Introduction into Summer School's Objective	CICD - Thiemann
		IWM and SCMP's in Kenya	CICD - Winnegge
	12:30 - 14:00	Lunch Break	
	14:00 - 15:30	Introduction to rural financing	FS - Becker
		IWM activities implemented in Kinyaritha-Ngaciuma Sub-Catchment and resulting challenges	WRMA Embu
	15:30 - 16:00	Tea Break	
	16:00 - 17:00	Financing opportunities for IWM in Eastern Africa	FS - Becker
15.09.	9:00 - 10:30	Financial challenges WRUA is facing	WRUA and WRMA
		Concepts to finance Integrated Watershed Management for African countries	NN - Gathenya
	10:30-11:00	Tea Break	

	11:00-12:30	Payment for Environmental Service (PES) - A Sustainable Concept?	KU - Mr. John Mwangi
	12:30-14:00	Lunch Break	
	14:00-15:30	Institutional Framework for WRUA Financing in Kenya	Ministry for Water and Irrigation (Water Trust Fund) - NN
		Evaluation of proposed budget of IWM plans	WRUA
	15:30-16:00	Tea Break	
	16:00-17:00	Evaluation of proposed budget of IWM plans	WRUA / WRMA
	17:00 - 18:00	Preparation of Field Trip	
16.09.		Field Visit to Kiladeda Sub-Catchment	All
17.09.	9:00-10:30	Financing Plans from Kiladeda Sub-catchment	WUA / PBWO
	10:30-11:00	Tea Break	
	11:00-12:30	Comparative Study Kenya / Tanzania	All
	12:30-14:00	Lunch Break	
	14:00-15:30	Comparative Study	All
	15:30-16:00	Tea Break	
	16:00-17:30	Activity plan of Kinyaritha-Ngaciuma Sub-catchment Management for next year	WRUA / WRMA
18.09.	9:00-10:30	Drafting IWM financing concepts for Kinyaritha-Ngaciuma Sub-catchment	All

	10:30-11:00	Tea Break	
	11:00-12:30	Drafting IWM financing concepts for Kinyaritha-Ngaciuma Sub-catchment	All
	12:30-14:00	Lunch Break	
	14:00-15:30	Drafting proposal for financing IWM financing measure in Kinyaritha-Ngaciuma Sub-catchment	All
	15:30-16:00	Tea Break	
	16:00-17:00	Drafting proposal for financing IWM financing measure in Kinyaritha-Ngaciuma Sub-catchment	All
19.09.		Excursion: National Park	All
20.09.		Church day	
21.09.	9:00-10:30	Drafting proposal for financing IWM financing measure in Kinyaritha-Ngaciuma Sub-catchment	All
	10:30-11:00	Tea Break	
	11:00-12:30	Drafting proposal for financing IWM financing measure in Kinyaritha-Ngaciuma Sub-catchment	All
	12:30-14:00	Lunch Break	
	14:00-15:30	Drafting proposal for financing IWM financing measure in Kinyaritha-Ngaciuma Sub-catchment	Group Work
	15:30-16:00	Tea Break	

	16:00-17:00	Drafting proposal for financing IWM financing measure in Kinyaritha-Ngaciuma Sub-catchment	Group Work
22.09.	9:00-10:30	Drafting proposal for financing IWM financing measure in Kinyaritha-Ngaciuma Sub-catchment	Group Work
	10:30-11:00	Tea Break	
	11:00-12:30	Presentation of proposals	All
	12:30-14:00	Lunch Break	
	14:00-15:30	Fine Tuning of Proposals	All
	15:30-16:00	Tea Break	
	16:00-17:00	Fine Tuning of Proposals	All
23.09.	9:00-10:30	Drafting Topics of Handbook	Working Groups
	10:30-11:00	Tea Break	
	11:00-13:00	Drafting Topics of Handbook	All
	13:00-14:00	Lunch Break	
	14:00-15:30	Drafting Handbook	Working Groups
	15:30-16:00	Tea Break	
	15:00-17:00	Drafting Handbook	Working Groups
24.09.	9:00-10:30	Fine Tuning of Handbook	Working Groups
	10:30-11.00	Tea Break	
	11.00-12:30	Fine Tuning Handbook	Working Groups
	12:30-14:00	Lunch Break	
	14:00-15:30	Fine Tuning of Handbook	All
	15:30-16:00	Tea Break	
	16:00-18.00	Presenting Handbook and Printing	All

25.09.	9:30-11:00	Presenting and Handing Over Results to PWBO, WRMA, WUA, and WRUA	All
	11:00-11:30	Tea Break	
	11:30-12:30	Evaluation of Summer School	All
	12:30-14:00	Lunch Break	
	14:00-15:30	Closing Ceremony and Handing Over of Certificates	SUA and CICD
	15:30	Tea and End of the Workshop	
26.09.		Departure and International Travel	

5.1 List of Participants

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