Terminal Evaluation

of the

Pangani River Basin Management Project

Comprising

The UNDP/GEF Mainstreaming Climate Change into Integrated Water Resources Management in Pangani River Basin Project (Tanzania)

00053407 (PIMS 3308)

and

The EU Pangani Project

Contract No. 9 ACP.RPR. 39 Commitment No. 73 Strengthening Participation and Planning for IWRM in Pangani Basin, Tanzania

Final Report

April 2012

Government of Tanzania – UNDP/ GEF – EU – IUCN

PEM CONSULT

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Abbreviations

CBO	Community Based Organizations
CRiSTAL	Community-based Risk Screening Tool: Adaptation and Livelihood
CSO	Civil Society Organisation
CWF	Catchment Water Forum
DfID	Department for International Development, UK
DFT	District Facilitation Team
DP	Development Partners
DSS	Decision Support System
EARO	East African Regional Office
EFA	Environmental Flow Assessment
EU	European Union
EWF	Environmental Water Flow
FY	Financial Year
GEF	Global Environment Facility
GoT	Government of Tanzania
GPS	General Budget Support
GWI	Global Water Initiative
HIPC	Highly Indebted Poor Country Initiative
HS	Highly Satisfactory (in scoring tables
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resources Management
JAST	Joint Assistance Strategy for Tanzania
LFA	Logical Framework Analysis or 'Logframe'
M&E	Monitoring & Evaluation
MOU	Memorandum Of Understanding
MoW	Ministry of Water
MS	Marginally Satisfactory (in scoring tables)
NA	Not Applicable
NGO	Non Governmental Organisation
NRM	Natural Resources Management
NWP	National Water Policy
NWSDS	National Water Sector Development Strategy
O&M	Operation and Maintenance
PBWB	Pangani Basin Water Board
PIM	Project Implementation Manual
PMU	Project Management Unit
PRBMP	Pangani River Basin Management Project
PRSP	Poverty Reduction Strategy Paper
PSC	Project Steering Committee
S	Satisfactory (in scoring tables)
SMART	Specific, Measurable, Accurate, Realistic and Time bound
SNV	Netherlands Development Organisation
SWAp	Sector-Wide Approach
TAS	Tanzania Assistance Strategy

TE	Terminal Evaluation
TOR	Terms of Reference
ToT	Training of Trainers
UK	United Kingdom
UNDP	United Nations Development Programme
VPO	Vice-President's Office
WANI	Water & Nature Initiative
WSDP	Water Sector Development Programme
WUA	Water Users Associations

0 Executive Summary

The Pangani River Basin Management Project (PRBMP) started in 2001 and has grown over the years based on Integrated Water Resources Management (IWRM) principles and according to the National Water Policy and the Water Resource Management Act. It has strengthened Climate Change issues into IWRM and provided support to equitable provision of freshwater.

The overall objective of the Project was to strengthen IWRM in the Pangani Basin, including mainstreaming Climate Change to support the equitable provision and wise governance of freshwater for livelihoods and environment for current and future generations.

The immediate objective of the Project was to empower water users and managers in Pangani Basin to manage and allocate water resources with consideration for Climate Change, the environment and other technical information through consultative processes and the sound framework of an IWRM plan.

The project had the following five Key Result Areas, which contributed to the achievement of the objectives:

Result 1: Increased understanding of environmental, economic and social implications of different river flow scenarios under expected climatic conditions and increased capacity to collect and analyze such flow assessment information;

Result 2: Water Users strengthened and empowered to participate in IWRM and Climate Change adaptation processes through dialogue and decentralized water governance;

Result 3: Water Sector's vulnerability to Climate Change understood and pilot actions generate lessons in adaptation;

Result 4: Pangani Basin Water Office coordinates other sectors and stakeholders in the development of an IWRM Plan; and

Result 5: Project implemented effectively & efficiently to the satisfaction of all stakeholders.

0.1 *Context and Purpose of the Evaluation*

The main purpose of Terminal Evaluation (TE) was to assess key achievements of the multi-donor funded Project and extract good practices and lessons learned. The scope of the evaluation covers the effectiveness, efficiency and relevance of the PRBMP that has been implemented with funding from the European Union (EU), United Nations Development Programme (UNDP)/ Global Environmental Facility (GEF) and the Government of Tanzania (GoT).

For the UNDP/GEF intervention, particular attention was made to evaluate its success in mainstreaming Climate Change adaptation options in the Pangani River Basin. The TE assesses the achievement of the Project in generating information for water managers to enhance water allocation in the basin, community water resources management strategies and information sharing among key partners and stakeholders in the water sector.

The assessment of the Project's impacts and achievements during the implementation period and the extraction of lessons learned both in terms of financial and technical approaches required an

evaluation of the improvements and changes in the designed indicators, as a result of the project implementation, compared to the baseline parameters.

The report provides an assessment of the following aspects:

- Impacts and key project achievements identified and documented according to the Project indicators
- Project achievements and sustainability in relation to the Project design
- Relevance of the project achievements to the national policy development agenda
- Efficiency and effectiveness of the project in terms of financial and planned activities
- Project shortcomings and lesson learned and policy review for integrating climate change adaptation in the water policy and IWRM.
- Clear and specific recommendations for future follow-up addressed to the stakeholders in the Project.

The point of departure for the TE was the objectives and targets that were established in the two Project documents with addendums prepared by EU and UNDP and reflected in the merged Project Logframe of 2007.

0.2 Overall Rating of Project Performance

The five results areas are rather optimistic in their expectations, and the execution also is more focused on developing methodologies and strategies which aims to be up-scaled across the basin rather than trying to cover the whole or most of the basin from day one. For instance result 2: "Water users strengthened and empowered to participate in IWRM and Climate Change adaptation processes through dialogue and decentralized water governance". The TE finds that if the description had been: "*Methods and strategies* for water users to participate in IWRM and Climate Change adaptation processes in dialogue with local governance strengthened" then the Project execution would have been more in alignment with the actual achievements recognized by VPO and MoW.

The PRBMP has been highly satisfactory in relation to Tanzanian policies – its emphasis to empower the PBWB sought to promote local identity and ownership of the outcomes. In addition, representation from MoW was catered for during Project milestone events to reinforce the sense of institutional ownership and to facilitate institutional learning and the exchange of experience among management partners in different river basins.

The Project has been successful in developing methodologies and strategies, and the Project worked extensively with rural water users in selected parts of the basin. The methodologies developed under the Project will make operational the main components of the Water Act 2009 and the Sector-wide Approach to planning. It also clearly contributes to Tanzania's implementation of the National Poverty Reductions Strategy and Millennium Development Goals.

The establishment of the Sub-catchment Forums in Kikuletwa will support the Government efforts in establishing decision-making bodies at lower levels, and as such a structure is regulated

by law (the 2009 Water Act), it is likely to be sustained once the operations can be secured by income through water user charges.

Pangani Basin Water Board (PBWB) have facilitated sessions on raising awareness of communities in water resources management in the basin and formed six Water Users Associations (WUAs). The project supported the establishment of WUAs and the Project contributed significantly to build capacity of local communities/water users in the basin to participate in the IWRM. These associations are the formal community institution to represent water users in the management of water resources that seeks to decentralize and devolve decision making to the lowest practicable level, with stakeholders participating in the planning, design and implementation of the management actions.

The Water Resources Management Act provides for the implementation of the Dublin IWRM principle in that the minimum number of women to be one third of the members at all levels of water resources management i.e. WUA, catchment/sub catchment water committee, Basin Water Boards up to National Water Boards. Pangani Basin Board has so far worked to meet this provision i.e. of the six formed WUA. The Project contributed notably to the promotion of women's participation in the IWRM, and there is an overall of 39% female for WUA Management Committee members (six people as par the act) and 37% of entire WUA members.

The PRBMP has prepared Environmental Flow (EF) assessments and reports on the future of the Pangani Basin. These summarise different development pathways for water allocation in the Basin and recap different scenarios including five water flow scenarios that are quite different from each other plus three scenarios involving Climate Change. This has helped the Government and other stakeholders to understand what the future could be like, and to discuss and negotiate the desired future scenario. However, the different scenarios were based on a limited database due to lack of consistent data collection in the periods with economic difficulties in Tanzania in the 1970s – 1980s. Hence, it is recommended that the Pangani Basin Water Board (PBWB) should continue to improve the quality of data and information on the quality and quantity of water in the basin in order to have better flow scenarios.

The PRBMP implemented pilot activities at community level based on vulnerability assessments to enhance the rural communities' capacity in terms of resilience and capacity to adapt to climate change through a range of climate change adaptation and mitigation activities. However, the pilot activities started rather late and even though appropriate committees were set up to operate and manage the infrastructure developed through the pilot projects, the community organisation are not operating with functional management systems. They need follow-up and support to further develop their capacity to operate and maintain for instance water supply systems and infrastructure established through the pilot activities.

The two project documents (UNDP/GEF and EU) have a set of indicators as well as means of verification. However, the indicators were not integrated in the merged LFA in 2007 and verifiable indicators have not been actualized during Project implementation, nor refined when preparing the annual work plans. It is a major set-back which makes it difficult to measure the impact of the activities especially community mobilisation and adaptation to Climate Change.

Rating of Project Performance

Criteria	Rating[1]	Observations	Recommendations/ Lessons learned
Design	MS	The merged LFA has been revised several times but verifiable indicators based on the two project documents were not actualized and included in the merged LFA. The five results areas have been supported by a number of donors but the Project's financial reporting has not been based on the five major result areas and merged LFA but on formats as required by individual donors.	Establish consistent LFA with simple verifiable indicators linked to impact monitoring system and reporting incl. financial reporting (from all donors) based on outcome areas.
Relevance	HS	Highly satisfactory in relation to Tanzanian policies; Marginally unsatisfactory in relation to needs of the resource-poor and vulnerable rural water user groups affected by CC.	Prepare complementary approaches to adaptation to Climate Change so that the coverage of the resource poor water user groups can be increased and empowerment of water user groups and associations.
Compliance	S	The PMU complied with the Project design to a high degree. It had adequate resources and the effort to comply with the intension of the Project by looking for more effective ways of achieving the targeted results has been demonstrated for instance by reallocation of funds to the groundwater assessment and collaborating with the Water Sector Development Programme (WSDP) to prepare IWRM for the Basin.	The PMU tried to address the problems of the resource poor and vulnerable water user groups. However, the outreach to vulnerable water user groups in the basin and success has been moderate.
Efficiency	MS	The capacity deficiencies noted by the Mid-term Evaluation were rectified by posting to the Project well-experienced staff from Netherlands Development Organisation (SNV) and PBWB. Data for budgets and total costs for activities under each of the five main result areas (including other donors than EU and UNDP) is not available.	In order to properly establish the Project's efficiency there is a need to compare the project's achievements to work plans and budgets. Hence, data for budgets and total costs for activities under each of the Project's result areas should be maintained and made accessible when required.

[1] UNDP/GEF six-point rating scale: Highly Satisfactory (HS), Satisfactory (S), Marginally Satisfactory (MS), Marginally Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU)

Criteria	Rating[1]	Observations	Recommendations/ Lessons learned
Effectiveness	S	Effectiveness assesses the benefits of the Project against its cost. When all benefits and costs are precisely measured, quantified and valuated to make them comparable, these criteria can be measured using a cost benefit analysis. The TE does not have such data and therefore have to make a qualitative assessment. he overall conclusion is that the effectiveness of the Project is satisfactory because of the benefits generated in terms of improved methodologies and enhanced capacity of the various stakeholders and water user groups, and in terms of well prepared Environmental Flow Assessments, Capacity Needs Assessments, Training of Trainers programmes and Monitoring and Evaluation (M&E) study that increased awareness at decision makers in the Basin, local governments and other basins.	There is still room for considerable improvements in effectiveness if consistent LFA with simple verifiable indicators linked to impact monitoring system are established at the design stage of the project
Impact	S	The Project has been operating without reporting on actualized and verifiable impact indicators on major results as agreed in the merged LFA. However, a lot has been documented in various publication and reports about the contribution made by PRBMP in Pangani River Basin in particular and in Tanzania in general. The capacities of PBWB and LGAs have been improved (by result 2) in terms of water governance and CC impacts, modelling, assessments and adaptation (by result 3). PBWB also gained a lot in result 4 by way of identifying their needs and strategizing bridging gaps and also in terms of understanding groundwater resources including provision of working tools e.g. expensive software, computers and pump test unit that many basins don't have.	The Project has resulted in increased understanding of environmental, economic and social implications of different river flow scenarios and the status of groundwater in Pangani River Basin; and the organized capacity building of the PBWB staff has made good progress.

Criteria	Rating[1]	Observations	Recommendations/ Lessons learned
Sustainability	S	Satisfactory in terms of technical sustainability, institutional and economic sustainability. The emphasis of the Project to empower the PBWB sought to promote local identity and ownership of the outcomes. In addition, representation from the ministry was catered for during Project milestone events to reinforce the sense of institutional ownership and to facilitate institutional learning and the exchange of experience among basins. Also, the Project prepared an exit strategy to provide guidance on the use of project outputs after the closure of the Project; a roadmap for continuation of results from the Project and to identify sources of support for sustained implementation of actions beyond project life.	More outreach and capacity building work needs to be done at the lower water user groups and other Sub-Catchments beyond Kikuletwa. It is expected that the training of PBWB staff will lead to better performance of their duties in the future, and the results has started to be seen, evidenced by better work plans, etc. The establishment of the Sub-catchment Forum in Kikuletwa will support the Government efforts in establishing decision-making bodies at lower levels, and as such a structure is regulated by law (the 2009 Water Act), it is likely to be sustained once the operations can be secured by income through water user charges.
Replicability	S	Project activities have attracted attention from other Basins within Tanzania and beyond its borders, especially with regard to methodologies for conducting Environmental Flow Assessments and the formation of Water User Associations. The enactment of Water Resource Management Act No. 11 of 2009 gives enough back-up for sustainability and replication of project activities.	The establishment of permanent links with the PBWB and district councils was a strategic action to do as those, were key influencing actors in the activities of the project. The formed and supported Catchment Facilitation Teams (CFTs) and Water User Associations (WUAs) are enabling institutions for sustainability of the project activities, beyond the project life time.

0.3 Recommendations

For multi-donor projects annual joint donor-partner review should focus on outcome and performance i.e. results, progress, challenges, developments in risk factors, need for adjustment and of developments in the project context. The review should (as a minimum) be based on progress reports with agreed performance assessment framework and indicators; financial reports based on result areas; and draft annual work plan and budget including performance targets.

The TE recommends follow-up projects to use the governmental structures for transfer of funds to PBWB. However, if efficient transfer mechanism cannot be ensured the donor may transfer funds to a project specific bank account (which removes the project from GoT procedures) but in all other ways find ways to mimic (or shadow) the GoT management and other systems in as many aspects as possible without losing the effectiveness and accountability of the project.

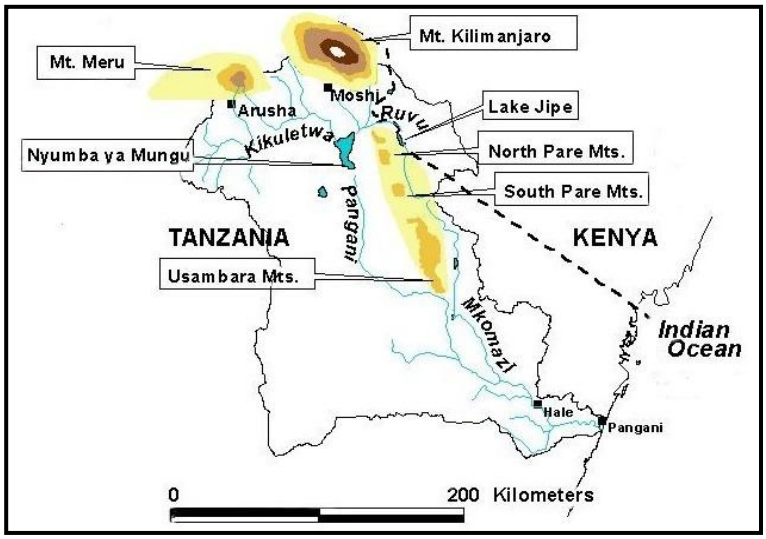
A major challenge of PBWB will be to sustain and further build on the activities that were carried out under the Project. The TE suggests the following further actions to reinforce the initial impacts from the Project:

1. To empower women to effectively participate in water resources management;

2. To support the full functioning and operationalisation of WUAs, and to further develop the Catchment Water Forum that is expected to guide the WUAs;
3. To develop Climate Change adaptation structures and approaches in order to use the available water in a more rational manner, such as soil-water conservation, small water storage dams, water flow controlling sluices, the capture and use of wastewater for irrigation, efficient water use;
4. To ensure that the Environmental Flow Assessment scenarios will be up-graded and the trained staff will continue to make good use of the facilities including better actual water flow data;
5. To strengthening the Capacity of the PBWB;
6. To mitigate (growing) conflicts over water user rights and ensure sustainable water management;
7. To demarcate River Buffer Zones to restore river ecosystems, guide riparian communities and reduce soil erosion

1 Introduction

Figure 1-1: Location of the Pangani River Basin



The Pangani River Basin Management Project (PRBMP) was funded by the International Union for Conservation of Nature (IUCN) through its Water and Nature Initiative (WANI), UNDP/GEF funded: '*Mainstreaming Climate Change into Integrated Water Resources Management in Pangani River Basin Project'* and the EU funded '*Pangani Project (Strengthening participation and planning for IWRM in Pangani Basin) project'*. The Project started in 2001 and has evolved over the years based on IWRM principles and according to the National Water Policy and the Water Resource Management Act. It has strengthened Climate Change issues into IWRM (UNDP/ GEF) and provided support to equitable provision of freshwater (EU). The Project funding is shown in Table 1-1:

Table 1-1: PRBMP **Funding from 2003 to 2010**

Calendar Year	2003-2004	2005-2006	2007-2008	2008-2009	2009-2010	Total
UNDP/GEF			$295,734	$354,722	$349,544	1,000,000
EU			$723,811	$723,811	$723,811	2,171,433
IUCN/ WANI	$221,421	$711,731	$341,723	-	-	1,274,875
Gov of Tanz.			$100,000	$100,000	$100,000	300,000
TOTAL	**$221,421**	**$711,731**	**$1,461,268**	**$1,178,533**	**$1,173,355**	**$4,746,308**

The Project aimed to generate technical information and develop participatory forums to strengthen Integrated Water Resources Management (IWRM) in the Pangani Basin, including mainstreaming Climate Change, to support the equitable provision and wise governance of freshwater for livelihood and environment for current and future generations.

1.1 Purpose of the Evaluation

The purpose of Terminal Evaluation (TE) is to assess key achievements of the multi-donor funded Project and extract good practices and lessons learned. The Terms of Reference (TOR) (for more details see annex 1) identifies a detailed list of issues to be assessed by the mission, and further identifies the following main users of the findings: Government of Tanzania (GoT),

Pangani Basin Water Board (PBWB), EU, UNDP/GEF, and IUCN, representatives from local communities, Non-Governmental Organisations (NGOs) and local partners.

The mission will assess the:

- Relevance of the project in terms of current development priorities and needs;
- Clarity and realism of the project's development and immediate objectives, including specification of targets and identification of beneficiaries and prospects for sustainability;
- Quality, clarity and adequacy of project design
- Efficiency and adequacy of project implementation;
- Project results, including a full and systematic assessment of outputs produced to date. The mission should in particular examine:
    - The degree to which project outputs have been defined based on adequate consultation with potential product users, and used and internalized by the national focal point institutions;
    - The outcomes of the consultation processes used by the project;
    - The scope for uptake by other related initiatives in the region
- Clarity of roles and responsibilities of the various agencies and institutions and the level of coordination and efficiency of partnership between relevant stakeholders.
- Level of stakeholder involvement in the project from community to higher Government levels and recommend on whether this involvement has been appropriate to the achieving goals of the project
- Efforts of UNDP (Country Office and UNDP-GEF) and the EU in support of the implementation
- Donor partnership processes, and the contribution of co-finance
- Potential of scaling up and replication of good practices from the project outcomes, identifying how will it be financed and, who will be responsible for financing and implementation
- Rating for each project outcome indicating at what level has been achieved.

Based on the above analysis the mission will draw specific conclusions and make recommendations for further action by Governments, EU, GEF, and/or UNDP and other partners. The mission will draw attention to any lessons of general interest. Any proposal for further assistance should include precise specification of objectives and the major suggested inputs, outputs and outcomes.

1.2 Methodology of the Evaluation

The point of departure for the TE is the objectives and targets that were established in the two Project documents prepared by EU and UNDP, addendums and the merged Project LFA of 2007. The findings are based on discussions with stakeholders and documents prepared before and during the project implementation period. Important elements have been direct interactions with the target groups and with the stakeholders involved in implementation of the Project:

- Discussions and interviews with key individuals within the Project, government staff, NGOs, private sector, communities and water user associations and with selected national partners, line ministries, key stakeholders and development partners.
- Stakeholder workshops to discuss findings and for feedback.

Field work methods used include:

- Key informant interviews
- Semi-structured group discussions
- Site visits in selected areas
- Collection of other relevant data and documentation

The overall approach to the evaluation adopted the 'outcome evaluation' analytical framework, which is particularly useful when a programme is implemented by regional and national institutions in cooperation and assisted by many donors, and especially when there are a wide range of external influences likely to affect programme outcomes. Maximizing learning potential and encouraging participation of all stakeholders is obviously also useful when such a plethora of multilateral, bilateral, and technical agencies are engaged in addressing a common purpose. In short, it is the complexity of the institutional landscape and the multiplicity of reporting and learning requirements at different levels which lend themselves to the design of the overall approach.

1.2.1 The Evaluation Team

The TE was undertaken by a team of independent consultants from PEMconsult a/s Denmark and Tanzania: Team Leader Torben Lundsgaard, international consultant and Dr. Faustin Maganga, specialized in social and institutional aspects of Natural Resources Management (NRM), IWRM and rural development planning in Tanzania.

The TE reviewed the Project documents prior to the work in Tanzania, which commenced in Moshi on 31st of October 2011 (Dr. Maganga joined the mission in Moshi 6th of November 2011). See time schedule in annex 2.

The following were contributed by IUCN and the Project Management Unit (PMU):

- Contact addresses
- Names and contact addresses of partners

- All basic documentation concerning the projects before the start of the assignment including information of locations to be visited.
- Any complementary information necessary (through documentation or interviews)
- Feedback on proposed work schedules and draft reports
- Facilities for meetings etc
- Organisation of field visits, booking of hotels and local air tickets during mission stay in Tanzania
- Local transport for visit to target groups

1.2.2 Disclaimer

The TE team expresses its gratitude for the kind and efficient support to the Terminal Evaluation during planning and implementation of the field work. In all the phases of the Terminal Evaluation an open and positive attitude of all staff and partners has greatly facilitated our work. Nevertheless, the conclusions and recommendations in this report are clearly those of the TE team, and do not necessarily reflect the opinion of IUCN, PBWB, UNDP, EU or any other Project partners or the persons and institutions consulted, and are thus not in any way binding for the Project.

1.3 Structure of the Evaluation Report

The Terminal Evaluation Report follows the proposed outline for terminal evaluation reports as indicated in the Terms of Reference (annex 1) for the TE including an extra chapter 4: Assessment of Project against Evaluation Criteria. The report largely comprises two main parts: Chapter 3 and 4: Findings and Conclusions and Assessment of Project against Evaluation Criteria containing the description of the Project planning and design, and assessment of log frame elements (relevance, effectiveness, efficiency, impact and sustainability); and Chapter 5 and 6: Recommendations, including drawing up the lessons learned from the Project.

UNDP has supported result area 1, 2 and 3 and the outcomes are rated in section 3.3.1 and 3.3.2. Co-financing of Project is evaluated in section 3.2.4 and 3.5 and risk management in section 3.2.1

The Terms of Reference is attached as Annex 1, Timeline for TE Mission as Annex 2, List of Persons Met as Annex 3, Annex 4 and 5 present the Merged Logframe and Summary of Activities, Visit to Pilot Projects is attached as Annex 6 and in Annex 7 contains a list of Project Documents.

2 The Project and its Development Context

2.1 *Project Start and Duration*

The Project started in 2001 with a series of pilot projects and has evolved over the years based on IWRM principles and according to the National Water Policy (2002) and the Water Resource Management Act. It has strengthened climate change issues into IWRM (UNDP/ GEF) and provided support to equitable provision of freshwater (EU). The Project funding from the various sources is shown in Table 2-1.

Table 2-1: Funding from 2003 to 2010

Calendar Year	2003-2004	2005-2006	2007-2008	2008-2009	2009-2010	Total
UNDP/GEF			$295,734	$354,722	$349,544	1,000,000
EU			$723,811	$723,811	$723,811	2,171,433
IUCN/ WANI	$221,421	$711,731	$341,723	-	-	1,274,875
Gov. of Tanzania			$100,000	$100,000	$100,000	300,000
TOTAL	**$221,421**	**$711,731**	**$1,461,268**	**$1,178,533**	**$1,173,355**	**$4,746,308**

2.2 Problems that the Project Seeks to Address

The problem that the Project seeks to address is the inadequate and unsustainable management of water resources in the Pangani basin. The population in the basin relies directly or indirectly on agriculture for their livelihoods and the Pangani Basin is of great importance to Tanzania, in terms of hydro-power, irrigation, fisheries, livestock etc. There is not enough water to meet the current demand in the Pangani Basin and the PBWB continues to receive requests for new water permits from local, municipal and industrial water users. Climate Change and adequate allocation for the natural environment are yet to be taken into consideration in the allocation process and conflicts are emerging between various water users,

2.2.1 Immediate and Development Objectives of the Project

The overall objective of the Project was to strengthen IWRM in the Pangani Basin, including mainstreaming Climate Change to support the equitable provision and wise governance of freshwater for livelihoods and environment for current and future generations.

The immediate objective of the Project (or purpose) was to empower water users and managers in Pangani Basin to manage and allocate water resources with consideration for Climate Change, the environment and other technical information through consultative processes and the sound framework of an IWRM plan.

2.2.2 Main Stakeholders

During design and implementation of the programme main stakeholders were:

- Ministry of Water (MoW) participated in key project activities and events in order to provide technical backstopping from the national level on policy, legislation and other matters. The Ministry participated in the planning of key activities, and monitoring of project progress and impact.

- The Pangani Basin Water Board (PBWB) has the mandate to manage, regulate and control water in the basin. The action was designed such that the PBWB had key leadership roles in all results areas of the Project. Staff from the PBWB participated in the planning, implementation and monitoring of all project activities.

- IUCN coordinated the overall project implementation provided technical oversight to the IWRM planning and the environmental flow assessment processes. Through its role in advocacy and global water policy debates, IUCN ensured that the experiences from field project activities in Pangani Basin were brought to national, regional and international water debates.

- Netherlands Development Organisation (SNV) has expertise in local governance and in the decentralization process in Tanzania, including the Pangani Basin, through its partnership with the Local Government Reform Programme. Already in the design phase SNV brought in its extensive experience in capacity building, organizational development and decentralization to this process, as well as its extensive contacts with local authorities and NGOs in the area.

- PAMOJA Trust is a registered NGO dealing with governance issues in water and education. PAMOJA facilitates collaboration between the private sector, civil society and local government. It has experience of working with the community in issues of water management at the grassroots level.

- Civil communities and private operators in the river basin.

- Water users and water user associations.

- Local governments and institutions

During implementation, stakeholder consultations and partner meetings consisting of PBWB, IUCN, PAMOJA and SNV occurred on a quarterly basis to plan and assess progress in Project implementation.

2.2.3 Expected Outcomes

The project had the following five Key Result Areas, which contributed to the achievement of the goal:

Result 1: Increased understanding of environmental, economic and social implications of different river flow scenarios under expected climatic conditions and increased capacity to collect and analyze such flow assessment information;

Result 2: Water Users strengthened and empowered to participate in IWRM and Climate Change adaptation processes through dialogue and decentralized water governance;

Result 3: Water Sector's vulnerability to climate change understood and pilot actions generate lessons in adaptation;

Result 4: Pangani Basin Water Office coordinates other sectors and stakeholders in the development of an IWRM Plan; and

Result 5: Project implemented effectively & efficiently to the satisfaction of all stakeholders.

3 Findings and Conclusions

In this section we will take our point of departure in the merged Logframe, the EU Pangani Project document and the UNDP/GEF project document and assess to what extent targeted outputs and outcomes could be verified during the visit through direct observations and communication with beneficiaries and involved institutions such as local governments, Water User Associations (WUAs), stakeholders and water user groups. For each Result Area of the merged Logframe from 2007, we will draw the conclusion of these findings and develop recommendations primarily for IUCN, UNDP, EU and PBWB (section 3.3).

3.1 Project Formulation and Design

Project planning started before 2001 and has subsequently developed in steps, evolving from the available funding and developing with donors coming on board. In July 2001, the Netherlands Ministry of Foreign Affairs contributed US$ 13 million to the IUCN Water & Nature Initiative (WANI). The objectives of WANI were to demonstrate ecosystem management in river basins; empower people in sustainable water management; promote wise governance of water resources; develop and apply economic tools and incentives; create and share knowledge; and promote awareness and learning from experiences.

A brief study and a stakeholder workshop resulted in the IUCN Global Water Program provisionally approving Pangani Basin as a WANI demonstration site in June 2002 and provided support of US$ 70,000 towards developing the Pangani demonstration project. As a first step in developing a larger project intervention, IUCN commissioned a detailed situation analysis on environmental and water issues in the Pangani Basin. The situation analysis report was completed and launched in March 2003. Project funding became available through WANI to support global learning initiatives related to water governance, environmental flows and environmental economics. Pilot projects in these three areas were carried out in the Pangani Basin. Financing of the pilot projects was provided through WANI and UK Department for International Development (DfID). This initial investment allowed IUCN to develop partnerships and better understand the challenges in resource management before investing in larger project interventions.

Based on the successful performance of the three WANI pilot projects and the interest and commitment of project partners, IUCN assisted the PBWB to develop a larger project intervention to address the needs arising from issues identified during the initial interventions. First, IUCN, through WANI, was also able to contribute funding to the larger project intervention. IUCN WANI contributed US$ 1 million in support of the project, with the expectation that the project would mobilize additional co-financing from other donors, equal to or greater than the WANI contribution.

In 2004, the Ministry of Water and Livestock Development[2], contributed with additional US$ 300,000. This contribution was the first portion of co-finance mobilized for the Project. PBWB managed these funds, using them to engage staff to support project activities.

[2] Known as the Ministry of Water

In 2005, IUCN with SNV as a partner and with inputs from the PBWB prepared a proposal to the EU – ACP Water Facility that would build upon and scale-up the governance and community participation processes of the project. In addition, the proposal included a component to support the development of an IWRM plan for Pangani River Basin. The project proposal was approved in January 2006. By October 2006, IUCN East Africa Regional Office (EARO) had established an agreement with the EU in Tanzania for EUR 1,707,822 co-finance to the Pangani Project.

The UNDP/GEF co-finance project document was finalized in August 2007 and signed. This component concentrated on mainstreaming climate change into IWRM in the Pangani Basin, so that it may support the equitable provision of freshwater for the environment and for livelihoods for current and future generations.

IUCN signed a Memorandum of Understanding (MOU) with the PBWB for Project implementation in March 2007. Table 3-1 summarizes the sources of funds for the PRBMP since 2003.

Table 3-1: Sources of funds for PBWMP since 2003

Source	Duration	Funding USD
WWC to WANI: Dialogues Pilot Project	2003 - 2004	US$ 69,875
DfID to WANI: Environmental Flows Pilot Project	2003 - 2005	US$ 70,000
DfID to WANI: Environmental Economics Pilot Project	2003 - 2005	US$ 125,000
WANI Pangani Demonstration Site: Development	2002 - 2004	US $70,000
WANI Pangani Demonstration Site: Implementation	2004 - 2007	US$ 930,000
Government of Tanzania	2004 – 2006	US $300,000
EU Water Facility	2006 - 2009	US$ 2,218,461
UNDP/GEF Climate Change	2007 - 2010	US$ 1,000,000
Total:	**2002 - 2010**	**US$ 4,783,336**

Additional partnerships have supported some of the activities within the PRBMP. First, the vulnerability assessment and adaptation activities focusing on the Kikuletwa sub-catchment (Climate Change) were implemented in partnership with the Climate Change and Development Project - a Pan-African project funded by the Ministry for Foreign Affairs of Finland and implemented by IUCN. The project aimed to ensure that Climate Change related policies and strategies lead to adaptation activities that emphasize the role of forests and water resources in supporting people's livelihoods and associated farming systems. This was to be done by providing the knowledge, tools, and capacity required to reduce vulnerability and enhance adaptive capacity to climate variability and change at the local and national levels.

Secondly, the Global Water Initiative (GWI)/ Running Dry Project funded by the Howard G. Buffet Foundation also supported complementary activities to the PRBMP. This was specifically on building capacity and raising awareness on IWRM and training and implementation of

Community-based Risk Screening Tool: Adaptation and Livelihood (CRiSTAL) and adaptation activities, with a geographical focus on the Pangani Mainstream catchment with infrastructure works focusing on Same district. The initiative focused on developing partnership amongst key organizations in three geographic clusters: Eastern Africa, Western Africa and Central America. The aim of the project was to promote the provision of water supply, hygiene and sanitation as well as watershed management (within the framework of IWRM) among rural communities living in arid and semi-arid areas of Same.

The additional funding for these initiatives is shown in Table 3-2.

Table 3-2: Additional funding complementing PRBMP

Source	Duration	Funding USD
Global Water Initiative (GWI)	Sept 2008- Sept 2009	US$ 282,733
Global Water Initiative (GWI)	Sept 2009- Sept 2010	US$ 202,568
Global Water Initiative (GWI)[3]	Sept 2010- Sept 2011	US$ 214,889
Climate Change and Development Project	2009 - 2011	US$ 506,200
Total	**2008-2011**	**US$ 1,206,390**

3.1.1 The Project Design

The TE rates the project design has been marginally satisfactory (MS):

There are two main Project Documents that were prepared for the EU and the UNDP/GEF components respectively, and the format and content of these are different, reflecting the priorities and focus of the donors. In addition, there is an agreement for funding between IUCN/WANI and IUCN Regional Office, which has taken on board specific requirements of the IUCN operations and sector involvements. There was not a consistent common Logical Framework Analysis (LFA), as the two main focus areas of the Project (IWRM and Climate Change) had two separate LFAs. These were complementary but having two LFAs in the same project creates confusion and to merge the two sets of LFAs into one was therefore needed and indeed commendable.

Observations
This individual planning approach was obviously unintended from the start, but PBWB and IUCN have been successful in attracting funds and have somewhat been overtaken by events in this case. The partners and donors agreed to merge the projects in 2007 and a merged LFA was developed. The LFA that merges the EU project document and the UNDP/GEF project document is presented in Annex 4. The main goal is to (i) "strengthen IWRM in the Basin, including mainstreaming climate change to support the equitable provision and wise governance of freshwater resources for current and future generations", and to (ii) "empower Water Users and

[3] The GWI funding is ongoing. Funds can be added for 2011-2012

Managers in Pangani Basin to manage and allocate water resources with consideration for climate change, the environment and other technical information, through consultative processes and the sound framework of IWRM". The Project had the following five Key Result Areas, which contributed to the achievement of the goal:

Result 1: Increased understanding of environmental, economic and social implications of different river flow scenarios under expected climatic conditions and increased capacity to collect and analyze such flow assessment information;

Result 2: Water Users strengthened and empowered to participate in IWRM and Climate Change adaptation processes through dialogue and decentralized water governance;

Result 3: Water Sector's vulnerability to climate change understood and pilot actions generate lessons in adaptation;

Result 4: Pangani Basin Water Office coordinates other sectors and stakeholders in the development of an IWRM Plan; and

Result 5: Project implemented effectively & efficiently to the satisfaction of all stakeholders.

The merged LFA is easy to read with problems to be addressed logically placed in different categories. The LFA states the merged overall objective, the merged immediate objectives and 5 expected results as well as sub-results with their associated activities based on the two project documents prepared by UNDP/GEF and EU. The overall objective, immediate objective and the 5 main result areas address the needs of the target groups, as do the outputs and activities. The results are consistent with achieving the objectives and with the two original project documents and description of actions. Changes include re-ordering the IWRM results (together with their outputs) and later a specific output in connection with undertaking a groundwater assessment (funded by EU) under the original result 1 was incorporated.

Conclusions

The overall objective, immediate objective and result areas are general in their description – providing information, creating awareness and developing sustainable strategies and capacities – and targets are obvious. However, the Monitoring and Evaluation (M&E) or indicator matrix was not well described in the merged LFA. The indicators should have been integrated in the merged LFA for effectively to monitor and evaluate the Project. The set of indicators in the LFA (from the two Project documents) were not updated during Project implementation, nor refined when preparing the annual work plans. It has been a major set-back because it could form the basis for monitoring and evaluation during implementation and track key Project implementation milestones.

Recommendations

In 2010 the Project fielded an M&E consultancy which described the background: "the challenge in articulating M&E components such as the indicator matrix is for instance that most of the water users and their organizations have inadequate knowledge of M&E specific skills. They should be further trained on all the skills areas depending on their intended role. Issues such as determining impact, outcome, outputs, targets, indicators that are keys to the process are a problem. This situation calls for a strategy for M&E beyond merely providing templates to apply M&E but also to determine the skills required and to train on these". The M&E study was

undertaken in 2010 and the joint PSC decided to - at this late stage of the Project – to focus on the PBWB's monitoring of future work plans.

The following areas were identified where skill building was deemed necessary and should be part of the M&E capacity building plan: Basic skills such IWRM and Climate Change, M&E specific skills, professional skills such as creating knowledge narratives on impact, and cross cutting issues such as gender. The M&E study recommended at the onset that the skills building shall be part of the process of M&E system implementation in the future as an initial stage setting even before training on applications of the templates on M&E system.

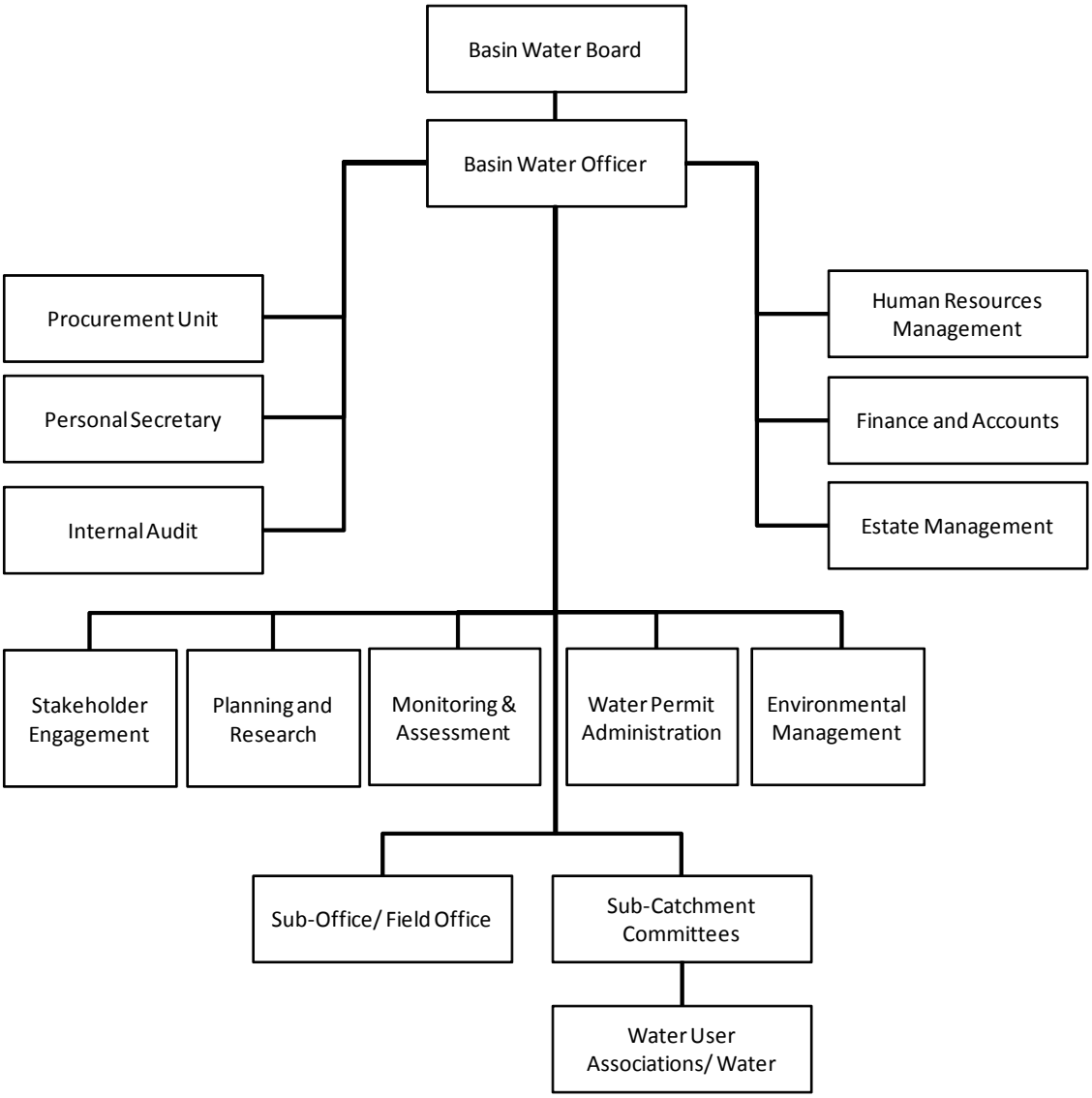
The TE team observes as a great achievement that this process has now started for the PBWB and now an indicator matrix is integrated in the PBWB's action plan for Financial Year (FY) 2010/11.

Project Implementation Structures

Pangani Basin Water Board (PBWB)

The Project was implemented by the PBWB, which was established in 1991 and is one of nine Basin Water Boards in Tanzania. The Board has a number of roles and responsibilities including data collection, processing and analysis for water resources management, monitoring and resource assessment; technical aspects of trans-boundary issues in the basin; co-ordinate and approve basin water resource management planning/budgets; approve, issue and revoke water use and discharge permits.; enforce water use permits and pollution control measures; co-operate between sectors at the local level; and resolve conflicts and co-ordinate stakeholders. The organizational structure of PBWB is illustrated in Figure 3-1.

Figure 3-1: PBWB Organizational Structure



The Project had a joint Project Steering Committee (PSC), which comprised of representatives from national and international organizations and ministries. The role of the joint PSC was to provide strategic guidance on Project operations, coordination and oversight to the project implementation, and provide cross-sectoral linkage to all stakeholders (including communities, private sector, energy sector, regional administration) within the Pangani Basin. The chairman of the PBWB chaired the joint PSC. The joint PSC met at least twice yearly and consisted of representatives from: Vice President's Office, Division of Environment, Ministry of Water, National Environmental Management Council (NEMC), Expert in community development and governance, Two Members from Pangani Basin Water Board, EC, UNDP/GEF, PBWB, IUCN and SNV.

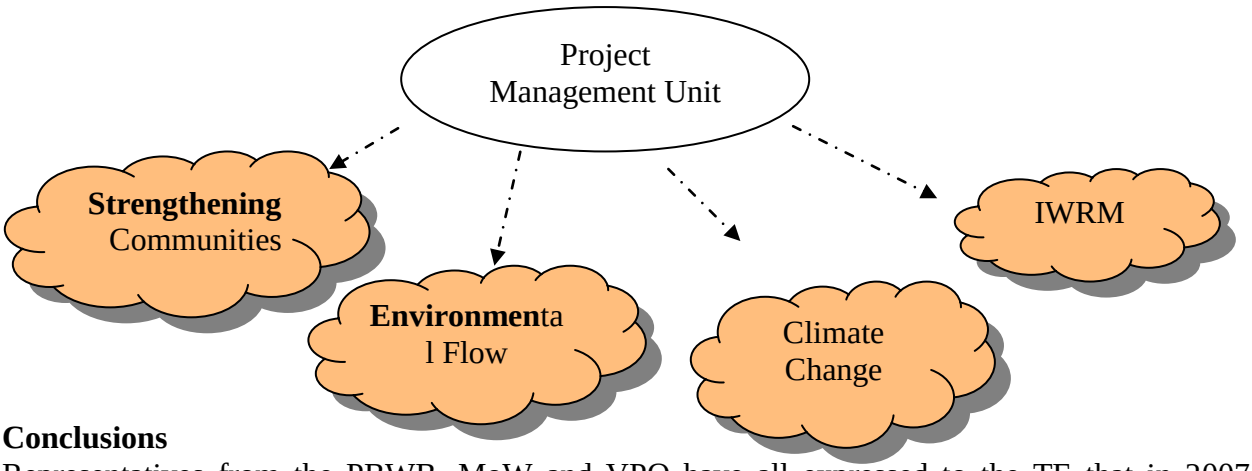
The Project Management Unit

The Project Management Unit (PMU) was integrated in the premises of the PBWB's head-office in Moshi. PBWB and IUCN-EARO entrusted the PMU to undertake the implementation of the activities of the Project. The PMU was staffed by a technical Project Coordinator and an administrative Project Manager, and benefited from technical and managerial inputs from PBWB and IUCN-EARO. A MOU between PBWB and IUCN-EARO spelled out the respective roles of all partners in the implementation of the Project.

At the end of the Project in June 2011 the PMU had a staff of 5, comprising the Project Coordinator[4] (funded by the Project), Project Manager (funded by the Project), a Project Officer (mainly funded by GWI), a Community Development Officer (funded partly by Ministry of Water and IUCN-ESARO), an Assistant Administration Officer (funded by PBWB) and a driver (funded by the Project).

The Project aimed at: "Strengthening the ability of the PBWB in transitioning into using the principles of IWRM, specifically in providing technical information to support in the water allocation process; in strengthening water managers and water users to participate in IWRM, and subsequently in developing an IWRM plan according to the 2009 Water Act." The capacity of PBWB is under development and the TE notes the PMU shared offices with PBWB and they worked together on a daily basis to implement the Project. The PMU action areas are illustrated in Figure 3-2.

Figure 3-2: PMU Action Areas



Conclusions

Representatives from the PBWB, MoW and VPO have all expressed to the TE that in 2007 PBWB didn't have sufficient capacity to implement the Project using the governmental structures, and, for that reason it requested IUCN for technical assistance to implement it using a project approach with accounting etc managed by IUCN. An agreement was made with IUCN to have overall coordination responsibilities of the project. The Project office and PMU were hosted by the PBWB and some of the staff (the community development officer and secretary) was seconded from the government.

[4] From mid-2010 the Project Officer took over the role of the Project Coordinator

Co-ordination, management and financing arrangements have been well defined. The component started at slow pace, various initiatives were made to support PBWB in the daily operation of initiatives. The PBWB did most of the work like facilitating communication and networking with different local organizations, a task which is difficult for an "IUCN-staff" to do alone. So, the activities were implemented by the PBWB with guidance from IUCN. The TE finds the staffing of the PMU and its close relationship to PBWB-staff has been adequate to ensure a coordinated implementation process as well as having offices in the same premises and integration of Project staff and PBWB staff ensured there was day-to-day contact to implement the Project effectively.

Recommendations
Work planning and budgeting at activity level is primarily of concern to the PMU responsible for day-to-day implementation. The joint PSC should primarily focus on outputs and outcomes in both planning and reporting, as work plans, budgets and progress reports at output level should be submitted for endorsement in the joint PSC. The TE finds that alignment of the following procedures with focus on outcome and performance will substantially improve the outcome of follow-up projects:

Annual review including the following elements: (i) Sector development of relevance to the planning framework, including progress in relation to key sector indicators and target group; (ii) Assess follow up on recommendation from the last review; (iii) Progress compared to plans within an agreed performance assessment framework and indicators including assessment of the set of output indicators registered in LFA; (iv) Assessment of assumption and risks; (v) Project disbursements and expenditures, as well as the relationship between physical and financial progress; (vi) Assessment of developments in the planning framework context, including assumptions and risks as formulated at project inception; (vii) Progress in capacity development; and (iix) Considerations of gender and environmental issues with reference to Gender, Climate Change and Environment baselines.

To undertake annual joint donor-partner review of project performance i.e. results, progress, challenges, developments in risk factors, need for adjustment and of developments in the project context. The review also serves as a quality assurance of the overall monitoring. Against this background, the review issues recommendations on further project implementation. The review should (as a minimum) be based on progress reports (including performance assessment framework); financial reports (based on result areas); draft annual work plan and budget (including performance targets); a table indicating follow-up to the process action plan of the last review; and up-dated risk analysis (table).

3.1.2 Country-ownership

Tanzania's National Water Policy (NWP) and National Water Sector Development Strategy (NWSDS) provide for environmental flow assessments and the establishment of catchment- and basin-level fora as a means of facilitating public participation in water management. These actions are deemed national planning priorities within the water sector. The PRBMP was designed to address these gaps and in particular to make operational the main components of the NWP and NWSDS in the Pangani Basin.

3.1.3 Stakeholder Participation

The TE rates the stakeholder participation in project formulation has been Highly Satisfactory (HS)

Stakeholder participation was a key consideration in the formulation of the Project for all the key result areas. The design and formulation of the Project was done through extensive stakeholder consultations with numerous meetings with civil communities, private operators in the basin, water users, water user associations and officials from local governments.

Observations
Ministry of Water participated in key Project activities and events in order to provide technical backstopping from the national level on policy, legislation and other matters. The Ministry participated in the planning of key activities, and monitoring of Project progress and impact.

The PBWB has the mandate to manage, regulate and control water in the basin. The Project was designed such that the Basin Water Board had key leadership roles in all results areas of the Project. Staff from the Basin Water Board participated in the planning, implementation and monitoring of all project activities.

IUCN coordinated the overall project implementation and provided technical oversight to the IWRM planning and the environmental flow assessment processes. Through its role in advocacy and global water policy debates, IUCN ensured that the experiences from field project activities in Pangani Basin were brought to national, regional and international water debates.

SNV has expertise in local governance and in the decentralization process in Tanzania, including the Pangani Basin, through its partnership with the Local Government Reform Programme. Already in the design phase SNV brought in its extensive experience in capacity building, organizational development and decentralization to this process, as well as its extensive contacts with local authorities and NGOs in the area.

Conclusions
To ensure good coordination among various activities implemented by various implementing partners meetings between PBWB, IUCN, PAMOJA and SNV occurred on a quarterly basis. The meetings were used to plan and assess progress in Project implementation.

For Result Area 1, the Basin Water Office was the focal point of capacity building efforts in order to fulfil the Water Office's role in coordinating the development of the IWRM plan. In addition, it was designed that other line-ministries e.g. agriculture and energy, regional and local governance and community based organizations should benefit from awareness-raising about the principles of IWRM, a review of the water implications of their sectoral strategies and facilitated negotiations over water priorities. Also, it was designed that a Tanzanian technical team assembled from the basin, ministry and research institutes (University of Dar es Salaam, Institute of Resource Assessment) were the main stakeholders, both in terms of building Tanzanian capacity and providing reliable technical information. At several points in the flow assessment process, larger stakeholder groups including the relevant line-ministries, water users and local government were brought together to identify likely water use scenarios in the future.

For Result Area 2, stakeholder participation focused on Water Users Associations. It was planned that various district- and regional extension officers in water management and community development should participate in the 'Training of Trainers' where they were to gain skills to conduct trainings on water governance and climate change adaptation for at least 150 Water Users Associations. It was also planned that Water Users Associations, along with members from district and local governments and other key stakeholders, should participate in the Sub-Catchment Forums. Representatives from the ministry were to be involved in key aspects of the process and participate in the dissemination of lessons and experiences.

For Result Area 5, it was planned that IUCN will take the lead in developing the Project Implementation Manual (PIM), coordinating the Project monitoring and evaluation systems and preparing Project progress reports, with key inputs from SNV, the Pangani Basin Water Office and line-ministries in these activities. In addition, a broader group with representatives from the PBWB and other institutions was to serve as the Project Steering Committee.

Recommendations
The positive participation of stakeholders has been very important in the development of methodologies and strategies in the institutional set-up of the Basins and is recommended to be followed also in future project activities

3.1.4 Replication Approach

It was designed that several of the results of the Project would pilot test aspects of the National Water Policy or Sector Strategy. Result 1, for example, focused on IWRM planning and strengthening the capacity of the Basin Water Office to coordinate such work. In this way, the Basin Water Office would be in a position to continue this work. It also built the technical capacity of the Basin Water Office and the MoW to conduct flow assessments. In this way, the Basin Water Office and MoW have been prepared to continue this work. The forums established under Result 2 (see also comments in section 4.3) are new institutions which are planned to provide information in the policy, strategy and legislation.

The Project was also designed to cater for the priority needs of the MoW and Basin Water Office in water governance. The emphasis of the Project was to empower the Pangani Basin Water Office and to promote local identity and ownership of the outcomes. In addition, representation from the MoW was catered for during Project milestone events to reinforce the sense of institutional ownership and to facilitate institutional learning and the exchange of experience among basins for instance dissemination workshops at national level to share experience and plan for coordinated approaches.

The Project has achieved high replicability by setting up structures to manage water sustainable at the water user group level and helped the Government and other stakeholders to understand what the future could be like.

3.1.5 Alignment to National Policies

The first Poverty Reduction Strategy Paper (PRSP) 2000 was developed in the context of Highly Indebted Poor Country Initiative (HIPC) and the Tanzania Assistance Strategy (TAS) processes

identified priority areas for the external support. The TAS has now evolved into the Joint Assistance Strategy for Tanzania (JAST), which was launched as a national medium-term framework for managing development cooperation between the Government of Tanzania (GoT) and Development Partners (DPs) in 2006. The strategy also outlines the roles of non-state actors and the extent that they contribute to the successful implementation of the strategy.[5]

Observations
The global narrative towards recipient ownership in development co-operation (Paris Declaration 2005) and the JAST process led to wide-ranging changes in development co-operation with Tanzania. The change included a shift from project and programme support to General Budget Support (GBS). Along with GBS, emphasis was on dialogue between DPs and GoT and Sector-Wide Approach (SWAp). Donors interested in a specific sector could allocate funds to the relevant basket whose resource use is guided by a national sector strategy.

At present international support to the public sector in Tanzania come under three funding mechanisms, GBS, Basket Funds/ (SWAp) and programme/project funding. In addition, most DPs also provide direct support to Civil Society Organisations (CSOs) and the private sector. Recently a new agreement was reached between the GoT and 12 DPs[6] on new GBS amounting to USD 562 million for the financial year 2011/2012.

Conclusions
The Project has been highly satisfactory in relation to Tanzanian policies – its emphasis to empower the PBWB sought to promote local identity and ownership of the outcomes. In addition, representation from MoW was catered for during Project milestone events to reinforce the sense of institutional ownership and to facilitate institutional learning and the exchange of experience among basins.

PRBMP was designed at a time when the Tanzanian National Water Policy was relatively new, and the Water Sector Strategy and legislation were in the final stages of development. Hence, some of the Project activities represented some of the first application or field tests of some aspects of the water policy, legislation and strategy. The forums established under Result 2 are new institutions which are provided for in the policy, strategy and legislation. The design of these forums will be of special interest to other basins throughout the country.

Recommendations
While the above scenario was reality when the Project approach was developed, the situation in 2011 is different. The Water Sector Strategy (2008) and the Water Act (2009) are in place, providing for the institutional set-up for implementing this kind of projects. Also, the PBWB is a strengthened institution compared to 2006. The TE recommends:

- To implement follow-up projects using the governmental structures for transfer of funds to PBWB. However, if efficient transfer mechanism cannot be ensured the donor may transfer

[5] In the Paris Declaration national ownership is understood to include both the government and non-state actors, thus cooperation with CSOs and the private sector is fully coherent with the established principles.

[6] The GBS donor group consists of 12 members, 9 of whom are bilateral donors (UK, Norway, Sweden, Denmark, Finland, Japan, Germany, Ireland and Canada), while three are multilaterals (AfDB, WB and EU).

funds to a project specific bank account (which removes the project from GoT procedures) but in all other ways find ways to mimic (or shadow) the GoT management and other systems in as many aspects as possible without losing the effectiveness and accountability of the project. This implies using the project modality in the initial phase and then step by step aligns management and other procedures to the GoT system as using a minimum of safeguards where necessary.

3.2 Project Implementation

The Project has been implemented by PBWB and funding provided by the GoT (used to engage staff to support Project activities), UNDP/GEF (responsible for mainstreaming Climate Change Adaptation (and adaptation benefits) into Results 1, 2 and 3), IUCN-WANI and the EU (specifically for IWRM activities). The Project was coordinated from the PBWB offices in Moshi.

Two officers under IUCN contracts were housed there. Another two officers with SNV contracts were based in Arusha and were largely responsible for implementing result 2. Vulnerability assessment and adaptation activities (result 3) were implemented in partnership with a Pan-African project funded by the Ministry for Foreign Affairs of Finland; and the Global Water Initiative/ Running Dry Project funded by the Howard G Buffet Foundation supported complementary capacity-building and awareness raising activities (results 2 and 3). All components were coordinated by PMU.

3.2.1 Implementation Approach

The TE rates the implementation approach to be Satisfactory (S)

The Logframe

The merged LFA of 2007 was mainly based on the two project documents prepared by EU and UNDP/GEF. Goals, objective and result areas are merged, easy to understand in their purpose although rather optimistic. According to the UNDP and EU key monitoring indicators of the LFA should be applied to assess Project progress during implementation, and the Project should develop a detailed overall M&E plan and reporting system in order to monitor and report on progress towards these indicators.

Observations
In 2008 Project partners drafted indicators for the Project's impacts to form the basis of further refinement and establishment of baselines. In 2010, a consultancy was assigned to update and implement the M&E system and it completed the work at the final stages of the Project with a final M&E workshop in May 2010. In agreement with PSC the M&E system was designed to be used beyond the Project rather than limited to a Project about to end. During this workshop, Basin staff configured process documentation templates that will be used to monitor outputs being produced by the PBWB from 2011 and forth.

Conclusions
The description in the merged LFA specify some targets which relate to capacity building of water user associations, staff from the PBWB and the Ministry of Water as well as researchers

and resource managers. The assumptions or identified risks are many and varied and include such factors as unwillingness of stakeholders to participate in, learn from or use information generated by the Project's interventions, a non-supportive national environment and greater than expected climate change impacts. However, for each, there is a corresponding mitigation measure and the Project has managed to deal with these assumptions.

The M&E system with assumptions or risk assessment operationalized in the merged LFA and the Project did not operate with clearly defined and measurable development impact indicators or risk assessment of for instance pilot projects. Outcomes and accounting has not been reported based on outcome areas, which is recommendable to ensure lessons learned. UNDP was a major contributor for Project activities, but for instance the vulnerability assessment and adaptation activities focusing on the Kikuletwa sub-catchment (Climate Change) were implemented in partnership with the Climate Change and Development Project and more than USD 500 thousands were funded by the Ministry for Foreign Affairs of Finland, which isn't reflected under the accounting per result areas (see also section 3.2.4)

In 2010 the staff at PBWB was trained in preparation of LFA and corresponding M&E to improve the staff's capacity to prepare project proposal, work plans and to monitor future interventions.

Recommendations
It is important for PBWB to attract support from various sources and to be accountable and transparent in its planning and reporting. To ensure this it could

- Further develop and improve accountable working tools for planning and M&E together with the WUAs.

Work plans

The work/planning and operational decisions were made during the partners quarterly meetings (PBWB, IUCN, SNV and PAMOJA). These meetings interpreted the interest of the Board and joint PSC. Annual work plans, technical and financial reports were prepared based on the results. The partner meetings were used to plan and assess progress in Project implementation. Minutes of the partner meetings were provided in supporting documentation. In addition, PBWB and IUCN met at least monthly to assess the implementation of project activities and used these opportunities to informally assess progress and where necessary agree on management responses.

Observations
Technical reports show progress towards achievement of activities and outputs. The financial reports captured planned and actual expenditure. For instance, by August 2009, less than 40% of the EU funds disbursed had been used, and for this reason a no-cost extension was requested and approved. The minutes of the joint PSC meetings show a close follow-up on activities and assessment of the progress towards achieving objectives and the overall progress in implementation.

Conclusions
The follow-up by the joint PSC and Board compensated to a certain degree for the above mentioned lack of integrated performance-and impact indicators in the Project's work planning. Thanks to the Project's training programme now PBWB is preparing annual work plans with detailed information about expected achievements.

Recommendations
- To use the PBWB's action plan for 2011/12 as detailed with performance indicators, targets, and activity plans as a model to start-up for improved planning in the basins.

Electronic information

IUCN and the Project have successfully used the electronic media for awareness raising and general information about the situation in the basin. PBWB has a website that provides basic information about the Board. However, there is no central database at PBWB for storing critical information, and the website needs enhancement to make it an effective tool for provision of information and as a channel for service delivery. For example, it could provide forms for GIS-based online interactive applications for water use permits or water discharge permits and explore ways which makes data accurately, consistently and widely available to support decision making and other administrative and technical processes.

Observations
Information and Communication Technologies (ICT) could enable easy networking of remote offices in the basin but PBWB needs to enforce technology to share databases between the head office, regional offices and water users on real time basis and makes data accurately, consistently and widely available to support decision making and other administrative and technical processes.

Conclusions
The Project's website has raised awareness to the public in CC, environmental water flow issues, state of environment and the general socio economic and agricultural challenges in the basin. As expected the PMU also used ICT in the overall management of the Project. The PBWB still need to operationalize the technology to improve networking of remote offices, local governments, WUAs and local water user groups.

Recommendations
- To make the website an effective tool for provision of information and as a channel for an accountably service delivery as for instance online interactive applications for water use permits or water discharge permits.

General Operational Relationships between the Institutions Involved

A key element of the implementation of the Project was that it operated with existing institutions – in particular, the PBWB, SNV, PAMOJA, MoW, communities, local governments and water

user groups- and associations – which, through capacity building, will be capable of ensuring sustainability as an integrated part of implementing the objectives of the Project.

The Water Sector Development Programme (WSDP) indicates that by 2015, all 9 Basin Boards should be autonomous - administratively and financially – and for that reason the PBWB needs to start having financial sustainability plans. The new institutional set-up for water resources management has a wide range of stakeholders who present both opportunities and challenges to Basins Boards and with support from the Project PBWB developed a Business Plan in 2009 covering the period 2010/11- 2013/2014 to support it to become autonomous by the year 2015.

Observations
The Project used the established networks used by PBWB and undertook capacity needs assessment to enhance key stakeholders' capacity for IWRM. Supported by the Project PBWB has developed a Business Plan covering the period 2010/11- 2013/2014 to support it to become autonomous by the year 2015. The plan indicates organizational development and capacity building as a priority issue to be explored and further developed.

Conclusions
The planned set-up of autonomous Basin Boards indicates the need to develop capacity to coordinate, network and create strategic linkages with other actors. Therefore, the critical capacity that PBWB needs to build is to coordinate the planning and implementation of IWRM plans.

Recommendations
PBWB is required to work and achieve its objectives through coordinating a diverse range of stakeholders and partners; and still needs to build capacity in developing strategic networks and linkages. This will be possible through awareness building and supporting the formation of grassroots associations (water user associations, catchment and sub catchment committees) and coordinating them. This will also include building the capacity of local government authorities. The TE suggests:

- To enforce the institutional framework of PBWB a.o. as indicated in the Capacity Needs Assessment report prepared in 2010 by the Project.

Technical Capacities Associated With the Project

The PBWB head office is in Moshi and there are two field offices, one in Arusha and another one in Tanga. Currently, the PBWB has less than 120 employees. The level of resources requirement will increase as the activities grow. According to information from the Water Officer not all of them have the skills required by the PBWB and a good number of them are approaching retirement age. This probably is one of the biggest capacity challenges that face PBWB that the staff needs intensively training packages to fulfil their new roles and mandates as coordinating planning and implementation of the mandates of PBWB.

Observations
The Project's operational capacity was improved as it was supported by a Community Development Officer assigned by PBWB to work full time on Project's activities. The Project

undertook a groundwater assessment as an important input to the IWRM plan that will be prepared under the Water Sector Development Programme (and not by the Project as originally planned). These changes have all required addenda, all of which have been approved by the EC, UNDP and IUCN.

The Project generated considerable knowledge by agencies other than the host agency, such as PAMOJA, IUCN, SNV and others. The Project also identified a number of issues and works to be further developed with assistance from external consultants and a number of consultancies and studies that were undertaken by the Project (Register in annex 7). Finally the Project undertook a capacity needs assessment for PBWB in 2010 with a number of recommendations for future interventions.

Conclusions
Staff, whose skills do not match the needs of PBWB in transition, do not contribute to strengthen the capacity of PBWB to execute its new roles and mandates. Instead, PBWB is carrying the burden of unnecessary human resources not achieving the goal of the organisation.

Recommendations
It is recommended to gain support:

- To train and build up the capacity of the staff to fulfill its future role and mandate of PBWB as indicated in the PBWB business plan.

3.2.2 Monitoring and Evaluation

The TE rates the monitoring and evaluation to Marginally Satisfactory (MS)

The Project did not integrate a revised set of Specific, Measurable, Accurate, Realistic and Time bound (SMART) indicators in the merged LFA to assess performance, impact and development of the Project. It could have been a valuable tool in this respect. In 2010 the PBWB recommended that the attention in the late phase of the Project should focus on building up the PBWB's capacity for monitoring, and an M&E mission came up with support that results in that PBWB now is preparing comprehensive activity- and annual work plans with M&E integrated in the plans.

Observations
Monitoring of Project activities was undertaken by the staff housed at the PBWB offices as well as Sub-Catchment Facilitation Teams (made up of local government technicians) who worked closely with the target groups. Annual financial progress reports were prepared which captured planned and actual expenditure of funds. Audit reports were prepared by an external auditor and the communication with the EU Delegation and UNDP has ensured that documentation was correct.

Efficient Project implementation was enhanced by regular meetings of Project staff and its joint PSC, and the following reports were produced by the Project:

- Inception Report

- Quarterly financial reports
- Bi-annual progress reports
- Annual Technical Progress Reports
- Occasional status reports, technical reports and project publications
- Project mid-term report

Conclusions
Accounting has not been reported based on the merged LFA's outcome areas (see also section 3.2.1 above). In particular a refinement of M&E that were planned for the inception process could have paved the way for a better general oversight of the outcome of the Project.

Recommendations
To follow-up on the capacity building and M&E strategy initiated by the Project and designed for PBWB's M&E system. Specifically it is recommended:

- To develop an M&E database to provide the PBWB management with accurate information for decision making. It should be based on PBWB's business plans, LFAs and integrated water management plans, to track implementation progress against targets, capture results against indicators and provide information about impacts in comparison to baseline surveys.
- To empower grassroots organizations to support the (above mentioned) monitoring function of the PBWB by supporting the formation of grassroots associations (water user associations, catchment and sub catchment committees) and coordinating them. This also include building the capacity of local government authorities

3.2.3 Stakeholder Participation

The TE rates stakeholder participation during project implementation to Highly Satisfactory (HS)

Production and Dissemination of Information

The work of the Project has been presented at a number of national and international conferences and workshops, and within a portfolio of IUCN WANI projects at numerous international meeting and conferences. In addition, the Project has made presentations to the PBWB on an annual basis.

Observations
Project staff and PWPB have participated in series of meetings and workshops in the basin on IWRM topics presenting lessons learned and recommendations from the basin. The Project has distributed a number of easy to read and well edited briefing papers, environmental flow scenarios, a situation analysis, a report on the Future of the Basin and many other reports and documents used in for instance training of trainers programmes and training and production of videos. The information is available on the website.

The Basin has hosted documentary makers. The first was a photographer and film crew gathering material for "Tales of Water", a multi media project including a photo book and documentaries portraying the way in which children perceive and live with water, as well as the surrounding ecosystems. The "Tales of Water" film of the Pangani Basin is being used to create awareness on water management issues in the Pangani Basin. Secondly, the project was featured in a documentary that was part of the Earth Report on BBC. The film was titled "In the Shadow of Kilimanjaro" focusing on the impacts of climate change in the Basin.

Conclusions
The project has been very successful in disseminating information to the public and to put the attention to problems and challenges in the basin.

Recommendations
- Approach to be replicated in other basins with similar background and challenges; especially the web-site has proven effective to reach the national and international interest groups.

Local Participation in Project Implementation and Decision Making

The Project operates within an environment which has complex and evolving networks and relationships. The basin is overexploited and can no longer cope with the ever rising demands. This situation has led to different types of conflicts, namely between (i) hydropower and irrigation, (ii) pastoralists and irrigators, (iii) agriculture and environment, (iv) hydropower and the environment, and (v) between farmers themselves. In order to mitigate these conflicts, and ensure sustainable management and utilization of the water resources in the basin, innovative approaches are required for involving water users and other stakeholders in managing and developing the water resources through participatory forums.

Tanzania legislation provides for establishment of Catchment Water Forum (CWF) as part of its strategy to manage water resources with local communities and stakeholders fully engaged i.e. Decentralization by Devolution[7]. The CWF will be operated by a Catchment Water Committee. This is formed where the MoW has announced a specific area in the basin as to be a catchment, and the entity will have its own Catchment Water Officer and its committee[8]. The committee has up to six members but not less than three and draws membership from riparian Local Government Authorities (1 seat), Private Sector in the catchment (1 seat), WUAs (2 seats) and a Chairperson. The Basin Water Board serves for a period of three years. The Project was designed before the Water Resources Management Act, 2009 (9), and the implementation was changed from piloting operationalisation of the CWF to strengthening and designing the missing member of the Forum i.e. WUAs.

Observations
Stakeholder analysis have been undertaken to realize meaningful community participation capacity to be build up in selected sub-catchment first of all the Kikuletwa sub-catchment. The

[7] Local Government Reform Policy Paper of 1998

[8] National Water Policy, 2002 and Water Resources Management Act, 2009

[9] The project started by implementing NAWAPO (2002) and lessons from this project were used to draft the Act

objective of the training was to strengthen and empower the water users within the Kikuletwa sub-catchment basin to enable them effectively participate in the Kikuletwa sub-catchment forum mandated to manage the water issues in the sub-catchment i.e. water management, water allocation and addressing water related conflict.

For that purpose a training module for Training of Trainers (ToT) on IWRM was developed. The participants of the ToTs course will then train others, principally at community level, on IWRM. While the trained trainers will use the module prepared by the Project as a basis for their subsequent training, the material will have to be adapted to take into account local language and the general level of understanding. The ToTs selected from the Pangani Basin were selected from a broad range of organizations and institution including government extension officers at the districts; personnel from CBOs, NGOs, private sector, and water user associations among others. These trained trainers have subsequently carried out community-level training.

Conclusions
The community-level training was piloted within the Kikuletwa sub-catchment, targeting members of the Kikuletwa sub-catchment forum. Lessons learnt have been incorporated into the training programme and are ready to be replicated in other sub-catchments. WUAs are ideal building blocks to organize the catchment –from the existing and potential Furrow Committees into Water User Groups. The further agglomeration with other water users into WUAs would make integrated catchment management really work. Through appropriate linkages with the BWO, Catchment Water Organization (CWOs) would provide grassroot legitimacy needed for the ultimate sustainability and autonomy of the BWOs, and provide the appropriate platform for consultation, and cooperation among the different stakeholders. A policy and regulatory framework to promote this aspect is provided in National Water Policy 2002 and the Water Act of 2009.

Recommendations
The step-wise approach using ToTs and support to local trainers to prepare local materials using local language, pamphlets and brochures adjusted to local priorities is an efficient way of communication and to be replicated in other sub-catchments. The TE suggest to:

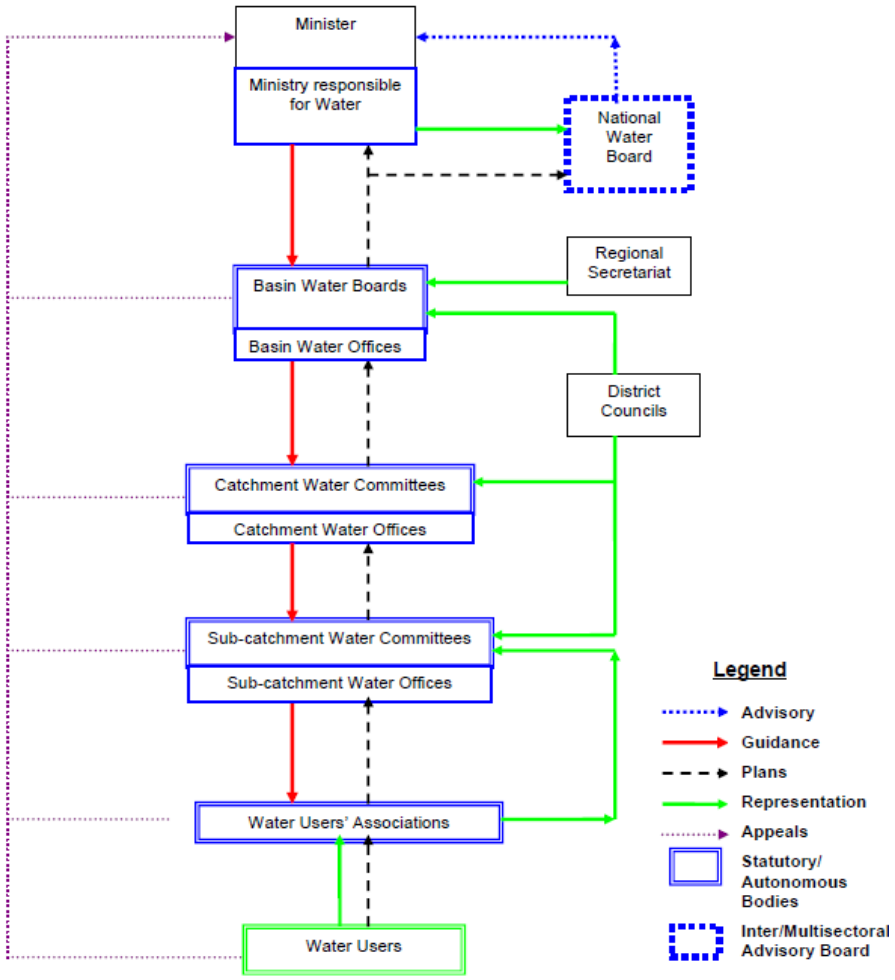
- Follow-up on ToT programme to ensure an effective water service, and the ability and capacity of WUAs and CWOs efficiently to manage water permits and to collect water fees.

Partnership and involvement of governmental institutions in project implementation

The Project office is at the premises of the Board in Moshi and activities in the field are implemented with help from facilitation teams based at the local governments.

Observations
The Project has been collaborating with the institutions shown in the figure 3-3 below as an integrated part of implementing the goal and objectives of the Project. Multi-disciplinary District Facilitation Teams (DFTs) were established to carry out awareness, facilitate water users in the formation of their WUAs, and support the day-to-day management of these groups. The TE observed these DTFs are currently –as the Project has ended- not working as effective as before partly because staff has changed duty stations and partly because of lack of incentives.

Figure 3-3: Basin Management Structures



Source: National Water Sector Development Strategy (2008)

Conclusions

The Catchment Water Committees and the facilitation teams based at the local governments have ensured the alignment of activities with local development plans and the sustainability of activities by integrating follow-up activities like for instance advisory services to the water user groups in the local development plans. However, incentives are necessary to further develop and strengthen the organizations.

Recommendations

- To strengthen the capacity of PBWB to develop strategic networks and linkages to a diverse range of stakeholders and partners, and to establish a proper –and long term based- orientation of the Catchment Water Committees and DFTs in all basins to effectively engage stakeholders on broader IWRM issues.

3.2.4 Financial Planning

The effectiveness of Financial Planning is rated as Satisfactory (S)

Available cost data has not made it possible to present the cost per result area from the merged LFA. Several donors have contributed to the Project but the accounting has been based on individual formats as required by the donors and is not summarized as per result area (except for UNDP).

Result area 2 and 4 were mainly funded by EU and UNDP/GEF has mainly funding result area 1 and 3. A groundwater assessment (result area 4) for approximately USD 400 thousands were funded by EU and Result area 5 (Project management) has jointly been financed by EU and UNDP/GEF

The cost-effectiveness of achievements

The cost-effectiveness of the Project's achievements (see also for more details in Section 3.3 below) seems to have improved dramatically since the 2008 Mid-Term Review. It was then noted that the Project activities in general have been delayed, except for Result 1, which was as seen to be proceeding fairly well, when considering the complexity of the modelling that take place. The Kikuletwa Catchment Forum establishment (Result 2) was found to be significantly delayed, and Result 3 had hardly started. Result 4 was awaiting inputs from the other results, thus consequently lagging behind. Below, is the TE's final evaluation of the effectiveness of each of the Project's five main result areas:

Result Area 1: Increased Understanding of Environmental, Economic and Social Implications of Different River Flow Scenarios:

The effectiveness of Result Area 1 is rated between Satisfactory (S) and Highly Satisfactory (HS)

It is noted that the different scenarios developed under this Result Area are based on a limited data base which was partly due to Tanzania's economic difficulties of the 1970s – 1980s. Hence, it is recommended that the PBWB should continue to improve the quality of data and information on the quality and quantity of water in the basin in order to have flow scenarios.

At the end of the Project the achievements were as follows:

- A spatial monthly model was developed, configured and calibrated for the Pangani River Basin.
- Several scenarios that examined the socio-economic trade-off between water allocations for different demands such as agriculture, hydropower and environment were analyzed.
- A Decision Support System (DSS) that is capable of producing straightforward outputs that are presented in an easily interpreted manner for broader use was developed.

Result Area 2: Water Users Strengthened and Empowered to Participate in IWRM and Climate Change Adaptation:

The effectiveness of Result Area 2 is rated Satisfactory (S)

Under this Result Area community training and awareness programmes were carried out, and this resulted in a number of community led initiatives for WRM i.e. source conservation in e.g. Lake Boloti. Also, the Result Area has enabled stakeholders (i.e. PBWB and LGA) to use the results of climate change adaptation strategies and EFA to allocate water. Finally, lessons generated under this Result Area have been used to assist Guidelines development and development of sections of the Water Act and Regulations.

Result Area 3: Coordination between Water and Climate Change Sectors Strengthened and Lessons Learned from Project activities Scaled Up

The effectiveness of Result Area 3 is rated Satisfactory (S).

Activities under this Result Area have assisted in designing flow scenarios for water allocations (this is used by Basin and partners), and results have been disseminated at different levels including a national workshop in Morogoro that involved different local experts. Vulnerability Assessment have helped to raise awareness of communities, equipped them with systematic screening procedures and have generated community based adaptation actions which are being mainstreamed through annual work plans for LGA. At the end of the project the achievements were as follows:

- A detailed climate change modeling study was carried out in the Pangani River Basin by the University of Cape Town, Climate Systems Analysis Group;
- Climate change vulnerability assessments were conducted to identify adaptation activities that can increase community resilience to climate change impact as predicted through the climate change modeling and community observations.
- Identified adaptation activities were piloted through funding from UNDP (through the Pangani River Basin Management Project (PRBMP), Climate Change and Development Project (CCDP) and the Global Water Initiative (GWI).

Result Area 4: Basin Water Office Coordinates other Sectors and Stakeholders in the Development of an IWRM Plan

The effectiveness of Result Area 4 is rated Satisfactory (S)

The original outputs of this result area were changed from the original ambition of developing an IWRM plan for Pangani River Basin, to an assessment of groundwater resources as an input to IWRM plan that will now be for the entire Pangani Basin to be funded through WSDP. At the end of the project the achievements were as follows:

- The capacity needs for the PBWB were assessed by a consultant supervised by SNV.
- GIS training was carried out for 9 basin staff from different fields namely; hydrology, hydrogeology, drawing and community development.

- An assessment of groundwater resources was carried out, collecting all necessary information in the basin.
- A groundwater assessment (November 2011) which attempts to establish the groundwater potential for the basin and its possible management strategy.

Result Area 5: Project implemented effectively and efficiently to the satisfaction of all stakeholders:

The effectiveness of Result Area 5 is rated Satisfactory (S).

This Result Area was designed to deliver the following outputs:

- Efficient systems and strategies supporting the project; and
- Key stakeholders aware of project progress and offer steering and guidance to implementation.

At the end of the Project the achievements were as follows:

- Project Implementation Manual developed;
- All human resources to support the project deployed;
- Multi-year work plan and budget for the project prepared;
- Progress reports on the Project implementation produced and disseminated to stakeholders;
- Mid-term Project Review carried out and most of its recommendations implemented;
- Partners and Steering Committee Meetings convened to plan, monitor & evaluate, review and provide guidance on the Project.

Financial management

The Project implementation followed annual work-plans in accordance with the Project documentation. EU and UNDP advanced funds to IUCN upon the request of the PBWB (UNDP through the Ministry of Water) and IUCN subsequently transferred the funds to the PMU, made after the submission of the quarterly financial report. Advances were made based upon the satisfactory financial and outcome/outputs deliveries of the previous quarter and also depending on the remaining advanced funds. IUCN provided financial management of project funds for the PMU. The details of the technical and financial procedures were contained in a memorandum between the PBWB and IUCN ESARO Office. Any significant changes in Project strategy or re-allocation of budgets were taken to the joint PSC for endorsement.

Observations
The Project's main contribution was software – providing information, creating awareness and developing sustainable strategies and capacities and the funds were available once the activities were approved in the annual planning.

Conclusions
The role and mandate of the Board is well described in the Water Act 2009, and the Board is building up its management capacity to cope with it.

Recommendations
- To enforce the PBWB's capacity to use activity based planning and budgeting to strengthen planning and budgeting capacity.

3.2.5 Co-financing execution and implementation modalities

All funding inputs (GoT, GEF, EU, IUCN, GWI), were part of a broad financial arrangement in which partners co-financed the PRBMP. The Project set-up followed the classic approach whereby UNDP-GEF delegated authority to UNDP Country Office in Tanzania, for a nationally executed project. In turn, UNDP-Tanzania signed this Project with the PBWB on behalf of the Ministry of Water.

Observations
The overall implementation mandate of the project was delegated to IUCN by the PBWB. The office of the PBWB in Moshi is the operational secretariat of the Board, which together with IUCN-EARO formed the implementing entities for the Project through a PMU. According to this agreement, the PBWB had overall supervisory responsibility to the donors and government for delivery of project results, and was the ultimate authority with regard to selection, recruitment, assignment of experts, consultants and national counterpart staff members and accountability, guidance, monitoring & evaluation.

Conclusions
Despite a number of individual donors and partners the PMU has managed to implement the Project as a unit in an integrated manner. Resources have been used under 5 major result areas and these also indicate the input areas for the donors for instance UNDP. Expenses for the UNDP component of the Project based on Result Areas is accounted properly and despite the fact that the log frame for the two components (EU and UNDP) was merged, each Project component maintained distinct financial reporting format as per the requirement in the respective signed contract. For the case of the EU component the budget/expenses were captured in a category format – human resources, travel, equipment etc while for the UNDP the budget/expenses were result based.

Unfortunately, available cost data does not make it possible to present the total cost per major result area (as identified in the merged LFA) including the contribution from other donors. Apart from UNDP and EU several other donors were involved in the financing of the activities as described in the merged LFA, which summarised under result areas, would have given a more complete picture of cost-effectiveness of the Project.

Recommendations
The merged LFA has united different donors and activities were implemented in an integrated manner. However,-once again- the merged LFA would be a better tool if integrated with verifiable indicators linked to an impact monitoring system and accounting of cost per major

result area. As detailed under section 3.1 above, the TE suggest similar projects co-financed by several donors:

- To undertake annual joint donor-partner review of project performance

3.3 Results

This section presents the project results, including a full and systematic assessment of results produced to date (quantity and quality as compared with the work plan and progress towards achieving the objectives). The assessment of Project outcome focus on the following aspects:

- The degree to which project outcomes have been defined based on adequate consultation with potential product users, and used and internalized by the national focal point institutions,
- The outcomes of the consultation processes used by the Project, and
- The scope for uptake by other related initiatives in the region.

The Result Areas are summarized in Table 3-3: Summary of Outcome Areas using the following colour key to identify the funding sources: Blue – WANI; Green – EU; Red – UNDP/GEF

Table 3-3: Summary of Outcome Areas

OUTCOME AREA	Sub-outcomes
RESULT 1: Increased understanding of environmental, economic and social implications of different river flow scenarios under expected climatic conditions and increased capacity to collect and analyze such flow assessment information	1.1 Tanzanian technicians capable of assessing environmental, economic and social implications of different water allocation scenarios 1.2 Environmental, economic and social implications of various flow scenarios under expected climatic conditions available for the Pangani Basin 1.3 Lessons in EFA in Pangani Basin extracted and disseminated to Ministry and other basins
RESULT 2: Water Users strengthened and empowered to participate in IWRM and Climate Change adaptation processes through dialogue and decentralized water governance	2.1 WUAs strengthened and empowered in IWRM principles and climate change adaptation 2.2 Sub-catchment and basin level forums established and integrate community, district and regional concerns into catchment and basin level water management 2.3 Stakeholder awareness raised on climate change and flow assessment results and this information informs water negotiations 2.4 Lesson in capacity building to WUAs and establishing stakeholder forums extracted and disseminated to Ministry and other basins
RESULT 3: Coordination between water and climate change sectors strengthened and lessons learned from project activities scaled up to inform other communities, basins and countries	3.1 Institutional and information gaps between the basin and national level processes bridged through studies, exchange and collaboration between climate change and water sectors 3.2 Pilot activities implement adaptation actions 3.3 Experiences and lessons learned in climate adaptations inform other communities, basins and countries

OUTCOME AREA	Sub-outcomes
RESULT 4: Basin Water Office coordinates other sectors and stakeholders in the development of an IWRM Plan	4.1 Pangani Basin Water Office empowered to coordinate and support IWRM processes 4.2 IWRM plan established for Pangani Basin 4.3 Financing strategy in place for implementation of IWRM plan 4.4 Lessons in IWRM planning in Pangani Basin extracted and disseminated to Ministry and other basins
RESULT 5: Project implemented effectively & efficiently to the satisfaction of all stakeholders	5.1 Efficient systems and strategies supporting the project 5.2 Key stakeholders aware of project progress and offer steering and guidance to implementation

3.3.1 Attainment of Outcomes/Achievement of Objectives

Result 1: Increased understanding of environmental, economic and social implications of different river flow scenarios under expected climatic conditions and increased capacity to collect and analyse such flow assessment information.

This Result Area 1 focused on collecting technical information on water resources in the Pangani River Basin. The technical information and findings from this component were supposed to guide other project components, especially on establishing sub-catchment forums for water governance as well as strengthening of water users associations (Result 2) and developing an IWRM plan for the basin (Result 4). Building on this information, it was expected that the different stakeholders will gain an understanding of social, economic and environmental trade-offs for different water allocations through the development of a number of scenarios.

Annex 5 gives a summary of the activities which were to be implemented in order to achieve the targets of Result Area 1 as indicated in the Project Documents

Achievements

Most of Project's achievements for Result Area 1 are documented in various Technical Progress Reports. Also, the TE was able complement information from these sources with information obtained from the review of documents; key informant interviews; semi-structured group discussions; as well as some site visits in selected areas. Based on these sources, it was noted that the project managed to achieve the following:

Sub-Result 1.1: Tanzanian technicians capable of assessing environmental, economic and social implications of different water allocation scenarios:

According to the Project Document, this Sub-Result Area was supposed to deliver the following output:

- Tanzanian team generates a technically sound report for a particular water allocation scenario.

It is noted that as a result of the Project a number of technical reports have been produced on baseline information including hydrology, river health, estuary health and social economics; also, six additional technical reports have been produced on various aspects of the Pangani system, including: hydroelectric power modeling, fisheries, fish and invertebrate life histories, riparian vegetation, hydraulic modeling, climate change modeling. The Project has also enabled the publication of a Scenario report including 15 scenarios for water allocation within the Pangani Basin, and a Decision Support System Tool to be used to create scenarios for water allocation available, with its manual. Also five Tanzanians are now able to manipulate the complicated Decision Support System, (DSS) used to model the environmental, economic and livelihood implications of different water allocation regimes;

Sub-Result 1.2: Environmental, economic and social implications of various flow scenarios under expected climatic conditions available for the Pangani Basin

According to the Project Document, this Sub-Result Area was supposed to deliver the following output:

- Detailed evaluation reports available for at least 7 possible water allocation scenarios in Pangani Basin during year 2

Under the Project, hydrological data sets for each of the nine (9) environmental flow sites, including the estuary, were developed using the new information in the Climate Change Modelling Report. Three water-resources developed scenarios using the hydrological data sets were analyzed, including (i) Maximum Agriculture; (ii) Optimize Present Day Flows for Ecosystem Support, with HEP (Optimize PD (HEP); and (iii) Add Storage Optimize Present Day. In December 2009 PMU applied to the EU to amend Result Area 1 and re-allocate Euros 330,178.80 from Result Area 4. The funds were to be used for a groundwater assessment as part of a 20 year IWRM plan rather than production of a 5 year IWRM plan.

The Future of the Basin report has been completed and summarizes the finding of the different development pathways for water allocation developed through the environmental flow assessment, taking into account probable Climate Change impacts in the future. It recaps some of the pertinent information from the State of the Basin Report, explains the mandate of the Pangani Basin Water Office and Board, and provides some information on the hydrology of the basin. It then outlines the approach used to develop scenarios and describes five of them that are quite different from each other plus the three involving climate change. This will help the government and other stakeholders to understand what the future could be like, and to discuss and negotiate on the future what they wish for. The report has been translated into Kiswahili in order to reach a wider audience.

However, the different scenarios developed were based on a limited data base which was partly due to economic difficulties in Tanzania in the 1970s – 1980s. Hence, it is recommended that the PBWB should continue to improve the quality of data and information on the quality and quantity of water in the basin in order to have flow scenarios.

Sub-Result 1.3: Lessons in EFA in Pangani Basin extracted and disseminated to Ministry and other basins

According to the Project Document, this Sub-Result Area was supposed to deliver the following output:

- Ministry and/or other basins aware of Pangani experiences in Flow Assessment by end of year 3 and lessons and experiences in Flow Assessment from Pangani Basin used in other basins by year 5

It is noted that under the Project, a report reviewing environmental flow assessments in Pangani, Greater Ruaha, Wami, and Mara Basins has been prepared and presented at "The Future of Environmental Flows: Providing Water for Nature and People" workshop which was organized to present the environmental flows review, validate the information and develop the way forward for operationalising and implementing e-flows in Tanzania and Kenya.

The workshop was also used as a platform to communicate results and experiences from Pangani Basin and elsewhere in the region. It also built on the outputs of the WWF e-flows workshop held in Naivasha, Kenya in November 2009. Participants from various ministries, river/lake basin organizations and development partners understood the purpose and application of flow assessment methods, future implementation of the results, and available capacity in and outside Tanzania. A number of presentations were given including information on the evolution of e-flows assessment, and the current movement towards using holistic approaches that provide scenarios so that stakeholders and governments can see possible future pathways for their basin. The information from multi-disciplinary assessments can show how changes in flows cause shifts in benefits between sectors and in transboundary cases, between countries.

Basin officers from the Wami-Ruvu, Pangani, and Rufiji, as well as the representative from the Ministry of Water and Irrigation in Kenya took part in a panel discussion to reflect on the challenges and experiences from undertaking flow assessments. This discussion included issues such as capacity building and how basins are using the information in water allocation and integrated water resource management planning processes.

Ratings

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objective	CC Adap-tation	
1.1 Tanzanian technicians capable of assessing environmental,	A number of technical reports have been produced on baseline information including hydrology, river health,	5 Tanzanians are now able to manipulate the complicated Decision Support System, (DSS) used to model the	S	S	The PBWB should continue to improve the quality and amount of data and information on the quality and quantity of water in the

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objective	CC Adaptation	
economic and social implications of different water allocation scenarios	estuary health and social economics; hydroelectric power modelling, fisheries, fish and invertebrate life histories, riparian vegetation, hydraulic modelling, climate change modelling Publication of a Scenario report including 15 scenarios for water allocation within the Pangani Basin, and a Decision Support System Tool to be used to create scenarios for water allocation available, with its manual. Publication of the State of the Basin report in English and Kiswahili	environmental, economic and livelihood implications of different water allocation regimes; The project has managed to deliver on most of outputs under this result area. It has even exceeded in some. However, the various flow scenarios are based on an (the best available, but) limited data base.			basin in order to have better flow scenarios. The limited data base was partly due to economic difficulties of the 1970s – 1980s.
1.2 Environmental, economic and social implications of various flow scenarios under expected climatic conditions available for the Pangani Basin	Hydrological data sets for each of the 9 environmental flow sites, developed. Three water-resources developed scenarios using the hydrological data sets The Future of the Basin report has been completed.	The Future of the Basin Report will help the government and other stakeholders to understand what the future could be like, and to discuss and negotiate on the future that they wish for. The report has been translated into Kiswahili in order to reach a wider audience	HS	HS	The PBWB should continue to improve the quality of data and information on the quality and quantity of water in the basin in order to have flow scenarios.
1.3 Lessons in EFA in Pangani Basin extracted and disseminated to Ministry and other basins	A report reviewing environmental flow assessments in Pangani, Greater Ruaha, Wami, and Mara Basins has been prepared and presented at "The Future of Environmental Flows: Providing Water for Nature and People" workshop organized by IUCN	Basin officers from the Wami-Ruvu, Pangani, and Rufiji, as well as the representative from the Ministry of Water and Irrigation in Kenya took part in a panel discussion to reflect on the challenges and experiences from undertaking flow assessments. This discussion included issues such as capacity building and how basins are using the information in water allocation and integrated water resource management planning	HS	HS	The PBWB should continue to improve the quality of data and information on the quality and quantity of water in the basin in order to have flow scenarios.

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objective	CC Adap-tation	
		processes.			

Conclusions

The project has managed to deliver on most of outputs under this result area. It has even exceeded in some. However, the various flow scenarios are based on an (the best available, but) limited data base.

Recommendations

The PBWB should continue to improve the quality of data and information on the quality and quantity of water in the basin in order to improve the quality of environmental water flow scenarios.

Result 2: Water Users strengthened and empowered to participate in IWRM and Climate Change adaptation processes through dialogue and decentralized water governance.

The National Water Policy and Legislation provides the basis and framework for management of water resources at the basin/catchment level including the establishment of Water User Associations. This component of the Project focused on governance specifically on community participation building the capacity of communities to effectively participate in IWRM and Climate Change adaptation processes through establishing sub-catchment and basin level Water Users Association/forums. It was hoped that by so doing, the Project will be supporting the implementation of the Tanzania Water Policy on decentralizing water resources management, in which mandates and management responsibilities are devolved to the lowest possible levels of governance.

The Project designed and piloted the establishment of Water Users Associations in Kikuletwa Catchment, Pangani River Basin. It was expected that the process will contribute towards empowering the PBWB, communities and local government to manage conflicts over water resources allocation between upstream and downstream, and between different users such as farmers and pastoralists. It was also expected that the process would addresses the need to have collective efforts to manage and allocate the declining water resources through Water Users Associations. This water declination is partly due to impacts of Climate Change.

Annex 5 gives a summary of the activities which were to be implemented in order to achieve the targets of Result Area 2, as indicated in the Project Documents.

Achievements

The Project's ambitions for establishing and strengthening WUAs are stated in the first two Sub-Areas as follows:

Sub-Result 2.1: WUAs strengthened and empowered in IWRM principles and climate change adaptation

Sub-Result 2.2: Sub-catchment and basin level forums established and integrate community, district and regional concerns into catchment and basin level water management

At the end of the project the Project managed to establish and register six WUAs. Members from four sub catchment WUA were trained on how to run their offices, provided with working tool such as; financial record keeping documents, technical and general record keeping files and relevant acts and regulations.

Hence, the Project managed to organize communities which elected representative to six WUAs and provided them with an understanding of climate change and adaptation issues, principles and relevance of IWRM. The catchment facilitation team (see above) continues to be engaged in continuous capacity building and awareness rising to communities on water resource management. The outputs of these efforts are supposed to improve:

- Understanding of communities on matters of climate change and water resources management as part of adaptation;
- Awareness of communities on issues of legal requirements on community participation in water resources management;
- Participation of communities (especially women) in Water Users Association.

The Project has published and distributed across the country the modules to be used to train the Catchment Facilitation Teams. Management committee members from the established WUAs were trained to build their capacity to run their associations. The topics were centred on: Leadership and good governance of water resources, Technical Report writing, Financial Report writing, Proposal writing, Conflict management, understanding of the Water Act with particular emphasis around water permits and rationale for WUAs. This also included crosscutting issues on climate change, environmental management and HIV/AIDS. The training increased linkage between upstream and downstream users.

Regarding Climate Change adaptation, Result Area 2 promised to deliver the following output:

Sub-Result 2.3: Stakeholder awareness rose on climate change and flow assessment results and this information informs water negotiations

According to the merged Log Frame, this Sub-Result Area was supposed to deliver the following output:

- 100+ stakeholder groups aware of environmental, economic and social implications of various water allocation scenarios for Pangani River

Under this result area, awareness rising through community based Climate Change vulnerability assessments using Community Based Risk Screening Tool – Adaptation and Livelihoods (CRiSTAL) and Climate Vulnerability and Capacity Analysis (CVCA) tools were undertaken. In addition translation and packaging of the Pangani Situation Analysis and State of the Basin Reports in English and Kiswahili was undertaken, and dissemination of results from these activities has been carried out. Three thousand copies of the above mentioned reports have been disseminated to different institutions, NGOs, Partners, Policy and Decision markers.

As a necessary additional activity to sustain water allocation and management of drilled boreholes (as part of adaptation to drought), the project carried specific training and meetings to draft constitutions intended to guide the operationalisation of the drilled boreholes in two villages. The outcome of this is a constitution that defines the roles of borehole committee, village government and individuals. The need for this training arose as a request from borehole committees that participated in WUA training.

Sub-Result 2.4: Lessons in capacity building to WUAs and establishing stakeholder forums extracted and disseminated to Ministry and other basins

According to the merged Log Frame, this Sub-Result Area was supposed to deliver the following outputs:

- Ministry and/or other basins aware of Pangani experiences in capacity building to WUAs and establishing stakeholder forums by end of year 3.
- Lessons and experiences in capacity building to WUAs and stakeholder forums from Pangani Basin used in other basins by year

The Project has collaborated with Global Water Initiative to organize a workshop on community participation in water resources management. The objectives of the workshop were:

- To share experience and knowledge on community participation in water resources management in Tanzania (and East Africa) including (a) Lessons and challenges on establishment and/or operationalisation of Water User Associations (WUAs), (b) Sustainability mechanisms of WUAs, (c) Relationships and/or interactions of WUAs with other institutions at the local level
- To develop recommendations on how to improve community participation in water resources management in Tanzania (and East Africa). This includes documenting the process, and thinking about new ways to communicate
- To create a network in Tanzania to continually share information on community participation and engagement around water user associations

In addition the Project participated and delivered a presentation on Tanzania's experience in water governance in the 2010 World Water Week.

Also, a series of briefing notes have been produced summarizing the information from the environmental flow assessment reports. They include:

- Climate Change adaptation in the Pangani Basin
- The health status of the Pangani Estuary
- Integrated flows assessment: Flows for people and nature
- River health status of the Pangani Basin
- IFA study: Hydrology of the Pangani Basin

- The role of river systems in household livelihoods
- Community participation in water resource management
- Integrated flows assessment – taking into account the value of ecosystems
- The Pangani River Basin Management Project (overview)

The project carried out training on Participatory Video (PV) involving stakeholders from PRBMP as well as the Global Water Initiative. Three videos have been produced, including how to make a participatory video, Climate Change adaptation and water governance. In addition, the footage taken during the training was used to produce a short video on the project in general.

Ratings

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objective	CC Adap-tation	
2.1 WUAs strengthened and empowered in IWRM principles and climate change adaptation	The project organized water users in communities within the Kikuletwa catchment in 4 WUAs and provided them with an understanding of climate change and adaptation issues, principles and relevance of IWRM. The catchment facilitation team continues to be engaged in continuous capacity building and awareness raising to communities on water resource management.	Improved understanding of communities on matters of climate change and water resources management as part of adaptation; Improved Awareness of communities on issues of legal requirements on community participation in water resources management; Improved participation of communities (especially women) in Water Users Association.	S	S	RBWB to continue assisting Apex WUAs with transport facilities and office facilities. RBWB to continue building the capacity of lower level water user groups
2.2 Sub-catchment and basin level forums established and integrate community, district and regional concerns into catchment and basin level water management	Facilitated design, establishment and registration of four sub catchment WUAs Training, awareness raising, constitutional development and feedback programs. These sessions ended with catchment general meetings for each WUA where constitutions were passed (after final commenting and aggregation). Composition of management committees observed a balance of gender and spatial distribution in the catchment.	One of the major outcomes of awareness raising was the advice to make water management a permanent agenda item in the local government structure and the need for PBWB to seek for audiences with councillors (full councils) to get the buy in of the necessary decision makers.	MS	MS	PBWB to continue assisting WUAs with transport facilities and office facilities. PBWB to continue building the capacity of lower level water user groups

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objective	CC Adap-tation	
	Facilitated 3 workshops to raise awareness on water management among local law enforcers.				
2.3 Stakeholder awareness raised on climate change and flow assessment results and this information informs water negotiations	Awareness raising through community based climate change vulnerability assessments using Community Based Risk Screening Tool – Adaptation and Livelihoods (CRiSTAL and Climate Vulnerability and Capacity Analysis (CVCA tools were undertaken. Translation and packaging of the Pangani Situation Analysis and State of the Basin Reports in English and Kiswahili was also undertaken, and dissemination of results from these activities has been carried out. Three thousand copies of the above mentioned reports have been disseminated to different institutions, NGOs, Partners, Policy and Decision markers.	It was argued that, as a necessary addition activity to sustain water allocation and management of drilled boreholes (as part of adaptation to drought), the project carried specific training and meetings to draft constitutions intended to guide the operationalisation of the drilled boreholes in two villages.	S	S	PBWB to be assisted to fine-tune the linkage between climate change and water management.
2.4 Lessons in capacity building to WUAs and establishing stakeholder forums extracted and disseminated to Ministry and other basins	Collaborated with Global Water Initiative to organise a workshop on community participation in water resources management. Participated and delivered a presentation on Tanzania's experience in water governance in the 2010 World Water Week. The Project has been presented at multiple fora giving presentation on how water governance institutions are addressing the climate change impacts in the Pangani Basin. Produced a series of briefing notes summarizing the information from the environmental flow	The workshop brought together participants from all over Eastern Africa (including Ethiopia).	MS	MS	It is recommended that PBWB should seek to provide more clear lessons learned based on experiences from the Project area.

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objective	CC Adap-tation	
	assessment reports. Carried out training on Participatory video (PV) involving stakeholders from PRBMP as well as the Global Water Initiative.				

Conclusions

During implementation various efforts has been made with communities and water users to raise awareness of climate change issues as well as IWRM principles, the importance of sustainable management of water, vulnerabilities to the adverse impacts of climate change, adaptation measures, etc. In addition to the consultations the Project introduced a 'slow-down' strategy in 2007 in order to ensure the sufficient level of community engagement in the Project activities. Because, if the activities had been implemented as they were initially planned, they would not be able to engage the local communities fully in the project activities.

The level of awareness about the IWRM and Climate Change has been significantly increased among local communities/water users through the Project activities mentioned above; and TE was further informed that the fact that the community involvement officer was female provided an added advantage to the Project to promote women's active participation in discussions held at the local community level.

Community training and awareness programmes were carried out, and this resulted in a number of community led initiatives for WRM i.e. source conservation in e.g. Lake Boloti. Also, the Result Area has enabled stakeholders (i.e. PBWB and LGA) to use the outcome of climate change adaptation strategies and EFA to allocate water. Finally, lessons generated under this Result Area have been used to assist Guidelines development and development of sections of the Water Act and Regulations.

Recommendations

To implement the program that has been identified by the Project for the PBWB to follow-up with the established WUAs through capacity building both at the sub catchment as well as to increase the linkage between catchment WUA and the lower level Water Users Groups.

Result 3: Water Sector's vulnerability to Climate Change understood and pilot actions generate lessons in adaptation.

This Result Area focused on understanding climate change impacts in water sector, promoting collaboration between water and climate change sectors, piloting adaptation actions and exchanging experiences and lessons.

Annex 5 gives a summary of the activities which were to be implemented in order to achieve the targets of Result Area 3, as indicated in the Project's merged LFA.

Achievements
The achievements of this Result Area were as follows:

- A detailed Climate Change modeling study was carried out in the Pangani River Basin by the University of Cape Town, Climate Systems Analysis Group;
- Climate Change vulnerability assessments were conducted to identify adaptation activities that can increase community resilience to climate change impact s predicted through the Climate Change modeling and community observations.
- Identified adaptation activities were piloted through funding from UNDP (through the Pangani River Basin Management Project (PRBMP), Climate Change and Development Project (CCDP) and the Global Water Initiative (GWI). The activities included (i) Drilling of two boreholes in Kikuletwa Catchment as an adaptation to the impacts of drought to conventional surface water sources. This activity is meant to sustain water supply to their traditional farming and livestock keeping livelihoods; and (ii) Poultry keeping support in Mbuguni village as an alternative income generating activity less dependent on water.

The above achievements are Satisfactory (S) because activities under this Result Area have assisted in designing flow scenarios for water allocations (this is used by Basin and partners), and results have been disseminated at different levels including a national workshop in Morogoro that involved different local experts. Vulnerability Assessment have helped to raise awareness of communities, equipped them with systematic screening procedures and have generated community based adaptation actions which are being mainstreamed through annual work plans for LGA.

Rating

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objectives	CC Adaptation	
3.1 Institutional and information gaps between the basin and national level processes bridged through	Organised a learning and dissemination workshop which aimed at conveying information on the use of climate change information including modelling	The identified adaptation activities were just marginally related to challenges of climate change in the area.	S	S	Continue to assist PBWB to bridge institutional and information gaps between the basin and national level exchange and collaboration with other basins in

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objectives	CC Adaptation	
studies, exchange and collaboration between climate change and water sectors	outputs to practitioners engaged in decision making, vulnerability assessment, impacts, adaptation, and policy development. Took part in Bangladesh 5th International Conference on Community Based Adaptation and shared experiences from the work of the PRBMP. A total of four abstracts were submitted and accepted to the conference, three of which touched on PRBMP: IUCN chaired a session on water governance which is now leading to the inclusion of a chapter in a book on community based adaptation.				Tanzania
3.2 Pilot activities implement adaptation actions	Drilling of two boreholes as an adaptation to the impacts of drought to conventional surface water sources. Poultry keeping support as an alternative income generating activity less dependent on water. Awareness raising and capacity building in the process of data collection and assessment. Establishment of communication framework between upstream and downstream people through WUA	The selected areas are vulnerable to drought, although they have rich aquifers. CC adaptation strategies included the piloting of efficient water use i.e. drip irrigation, combined with conservation agriculture where possible. As a result of project initiatives, drip irrigation has been adopted by Simanjiro district council and Central Zonal Irrigation Office). The constructed boreholes have helped to support clean water provision that help to curb water borne diseases accompanied by floods.	S	S	PBWB to be assisted to fine-tune the linkage between climate change and water management
3.3 Experiences and lessons learned in	The process of carrying out the climate change vulnerability	In addition, the climate change vulnerability assessment process using	S	S	Support PBWB to design and implement appropriate Climate Change adaptation

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objectives	CC Adaptation	
climate adaptations inform other communities, basins and countries	assessments has not only collected necessary data but has also raised the awareness of planners at basin, district and local level on impacts of climate change and will guide/influence the process of their subsequent activity designing.. The outputs of the vulnerability assessments were also integrated into district development planning	the adaptation tools of CRiSTAL and CVCA has generated valuable lessons which are being used to update and inform the use of adaptation tools.			measures in line with the Tanzania National Adaptation Programme of Action (NAPA)

Conclusions

The selected areas for climate change adaptation are vulnerable to drought, although they have rich aquifers. CC adaptation strategies included the piloting of efficient water use i.e. drip irrigation, combined with conservation agriculture where possible. As a result of Project initiatives, drip irrigation has been adopted by Simanjiro district council and Central Zonal Irrigation Office. However, drip irrigation are not viable options for the poor communities the Project has been working with, because installing and maintaining drip irrigation is too expensive for subsistent farming communities to sustain, although it is an viable option for commercial farmers who produce high value crops (and as such relevant for a more efficient water use).

The constructed boreholes have helped to support clean water provision that help to curb water borne diseases accompanied by floods and to reduce the reliance on the surface water, especially during drought conditions. Likewise, the promotion of the poultry keeping was to diversify income generating activities of communities in the basin – to make them more resilient to drought situations. The activities have been identified as most relevant adaptation actions by the communities – with technical assistance provided by extension officers and other experts in the region/districts - through the participatory vulnerability assessment exercise. However, the activities started rather late and even though appropriate committees were set up to operate and manage infrastructure developed through the pilot projects the community organisations' capacity to operate and maintain relatively heavy investments are not well established and they need follow-up and support to further develop capacity to manage the installations.

Recommendations

PBWB to be assisted to fine-tune the linkage between climate change and water management, and to follow-up with new pilot projects but with more time and resources for developing the community organisations

Result 4: Pangani Basin Water Office coordinates other sectors and stakeholders in the development of IWRM Plan.

The original activities within this Result area would enable the PBWB to coordinate other sectors and stakeholders in the development of an IWRM Plan. It was expected that the IWRM plan for Pangani Basin would be produced during year 3 of the project, and gazetted by year 5. However, following the recommendations of the Mid-Term Review the objectives were toned down just to contribute to the development of an IWRM plan for the Pangani Basin. It was now expected that the information on scenarios from the Flow Assessment and detailed groundwater information would be used to influence the IWRM planning and implementation process to be funded under WSDP with funds from the World Bank.

The justification for changing the objectives of this Result Area is contained in the EU Addendum 3 where it is explained that the PRBMP was developed in the early stages of the Water Sector Development Programme (WSDP) when funds were not necessarily available to the Basin for IWRM planning. Given the funding and time limitations of the project, it was decided to develop a 5 year rolling plan focusing only on the mainstream Pangani Basin. An IWRM plan for the entire basin including small basins under the Pangani Administration (Zigi, Mkulumzi, Msangazi, and Coastal Rivers) that has a time horizon to 2030 was planned to be undertaken with National Water Sector Development Programme (WSDP) support when it became available. This overall plan intended to incorporate the 5 year rolling IWRM plan of the Pangani River Basin including the other 3 small basins outside the Pangani River Basin.

Addendum 3 notes further that since the PRBMP was initiated, the WSDP has evolved and funds were now available for all basins to undertake a variety of activities including IWRM planning. Consequently, it is important to consider the initial IWRM planning process be part of the comprehensive planning so that the resources are invested in a manner that would produce the most effective plan for the Pangani Basin. In addition, there were studies that were initiated, such as a study funded by IUCN on transboundary hydrology of Lake Jipe, which could be expanded and brought into the IWRM plan. Thus, the PRBMP funding could be used to contribute to the overall long term IWRM plan for the Pangani Basin rather than a separate 5 year plan. This would streamline the process and avoid unnecessary repetition.

Annex 5 gives a summary of the activities which were to be implemented in order to achieve the targets of Result Area 4, as indicated in the Project's merged LFA.

Achievements
As noted before, the outcome of this result area was changed from the original ambition of developing an IWRM plan for Pangani Basin, to an assessment of groundwater resources as an input to IWRM plan that will now be for the entire Pangani Basin to be funded through WSDP. The TE finds the Project achieved the following:

Sub Result 4.1 Pangani Basin Water Office empowered to coordinate and support IWRM processes

The capacity needs for the PBWB were assessed by a consultant supervised by SNV. The scope of this assignment was limited to the review of the resources and management aspects of the overall organizational capacity framework. Under resources, the focus was on staff, infrastructure, technology and financial resources. While under management, the focus was to review the strategic leadership, programme, process management and networking and linkages.

The consultants sought to assess each type of organizational capacity against the current situation in order to determine strengths, challenges, adequacy or gaps and provide proposal on capacity building needs based on the identified gaps. At each level of the capacity issues assessed, the consultant made reference to the input from the Capacity Development Plan carried out by PBWB staff with the assistance of the MoW. Recommendations of the report focused within capacity building to staff members, developing linkage and networking, and developing/rehabilitating measuring/monitoring network in the basin.

SNV with assistance from the consultant carried out two workshops for PBWB staff in Arusha and Moshi. The aim of the workshops was to generate the capacity building strategic plan. The plan identified four areas of focus, namely: Reorientation of working culture (attitude and mindset), Managerial skills, Advocacy and behavior change skills and Strategic Leadership and governance. The workshop participants highlighted the change in performance-based culture as a key element of realizing the full potential of the organization.

As part of capacity building, a GIS training was carried out for 9 basin staff from different fields namely: hydrology, hydrogeology, drawing and community development.

Sub Result 4.2 IWRM plan established for Pangani Basin

Due to changes from the original ambition of developing an IWRM plan for Pangani Basin to an assessment of groundwater resources as an input to IWRM plan this Sub-Result Area focused on the groundwater assessment study implemented through a consultancy contract. The consultancy has collected all necessary information in the basin. These include:

- Geophysical investigation to determine aquifer geometry in Kahe Basin;
- Geographical coordinates for boreholes with water quality data (in Arusha, Moshi, Same and Tanga)
- geographical coordinates for boreholes
- Well completion forms to determine specific capacity of boreholes in the basin
- Hydro-geological data for modeling
- Satellite based land-use change identification between 1987 to 2005

This first report on existing groundwater information was delivered at the end of October 2010, after about three months of intensive search for suitable information at the Pangani River Basin offices in Moshi, Arusha, Tanga, the Drilling and Dam Construction Agency, Geological Survey in Dodoma, Ministry of Water and Irrigation, Stakeholders (e.g. Tanganyika Plantations Company, TPC), Urban Water Supply enterprises in Moshi, Arusha and other owner of boreholes. The final report came out in November 2011.

The review of the existing GIS data within the Pangani Basin water office indicated a limited availability of such data. There were few hard copy maps which were used only for cross checking during digitization. GIS data and information was acquired and compiled from various sources and data processing was carried out using ArcGIS 9.2 & 9.3 software. The main sources for GIS data were the Consultant's database archive and the Tanzania Geological Survey. Additional, GIS information was sourced from Ministries, various institutions, reports/publications as well as from the Internet.

The Project organized a stakeholders meeting to get their inputs on preliminary findings of the assignment. The workshop included participants from the Ministry of Water, Drilling and Dam Construction Agency, TPC (the then Tanganyika Plantations Corporation), Arusha and Kilimanjaro Region Technical advisors-Water, Zonal Irrigation Office, District Engineers from Arusha and Kilimanjaro and Municipal Councils of Moshi and Arusha. One of the major outputs of the workshop was the need for the consultant to enrich his findings by carrying out some field observation (especially on landuse maps) and more focus on management aspect of groundwater.

The consultant submitted the draft final report on 20th May 2011. The report has documented a great deal of valuable information with detailed discussions around the following sub sections that govern the hydrogeology of Pangani Basin and are of importance to consider in water management. These are:

- Landcover/land-use changes and its effects on groundwater
- Hydrogeology
- Groundwater Occurrence and types of Aquifers
- Groundwater Potential and results of pumping test
- Groundwater Recharge
- Groundwater Vulnerability
- Groundwater Management Framework

The Groundwater Assessment Report was completed in November 2011 with the following highlights:

- There is no major "regional" aquifer in the Pangani Basin. Aquifers are localized (discrete) along the coastal zone, tectonic valleys, fractured volcanic basalts and pyroclastic rocks, and in weathered, fractured, faulted basement rocks (regolith).
- The situation on groundwater quality of the Pangani Basin varies from fresh to saline waters. In general some areas along the coast and areas of valleys or depression within the etamorphic basement area with low rainfall show elevated EC values (>1000 μs/cm). Fluoride problems occur in the volcanic area of Arusha town down to the Sanya plain. Kahe plains have high fluoride values with less salinity problems. Fluoride decreases towards areas of Usagaran metamorphic rocks. Many water sources in the Pangani Basin receive some kind of agro-chemical pollution such as pesticides and industrial like heavy metals.

High salinity, iron (Fe) and nitrate (NO3) is experienced eastwards of the Pangani Basin towards the coastal zone.

- The groundwater potential revealed that the best groundwater can be found east of Moshi (Himo junction). This area was found to have a specific capacity of up to 500 Q/m of drawdown. Values, ranging between 20 and 50 Q/m lie some 40 km south-west of Same town, west of the Nyumba ya Mungu reservoir and the Sanya plains. Figure 1.3 shows the groundwater potential in the basin. However more investigation is required for fine tuning the map.

- Groundwater recharge is related to macro relief, local relief and rainfall. Areas with a low rainfall, however can still receive an amount of recharge, if they are situated relatively close to mountainous areas where higher rainfall occurs. Local topography has a main control on the amount of recharge a particular area receives. Groundwater recharge can take place only where groundwater storage is possible. The groundwater once replenished must flow somewhere, either underground or reappear as surface water. If it re-enters the surface water cycle in the inland, it should show in the base flow of the rivers. Groundwater recharge thus varies from one place to another.

Rating

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objectives	CC Adap-tation	
4.1 Pangani Basin Water Office empowered to coordinate and support IWRM processes	The capacity needs for the PBWB were assessed a consultant supervised by SNV. SNV with assistance from the consultant carried out two workshops for PBWB staff in Arusha and Moshi.	The scope of the capacity needs was limited to the review of the resources and management aspects of the overall organizational capacity framework. Under resources, the focus was on staff, infrastructure, technology and financial resources. While under management, the focus was to review the strategic leadership, programme, process management and networking and linkages. The capacity building plan identified four areas of focus, namely; Reorientation of working culture (attitude and mindset), Managerial skills, Advocacy and behaviour change skills and Strategic Leadership and governance.	S	Not Applicable	Continue with efforts to make PBWB strong autonomous in line with the Water Act The PBWB should be assisted to improve its data and information base in order to deliver the original ambition of developing an IWRM plan for whole of Pangani
4.2 IWRM plan established for	The output of this result area was		Not	Not	

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objectives	CC Adap-tation	
Pangani Basin	changed from the original ambition of developing an IWRM plan for Pangani Basin, to an assessment of groundwater resources as an input to IWRM plan that will now be for the entire Pangani Basin to be funded through WSDP.		Applicable	Applicable	
4.3 Financing strategy in place for implementation of IWRM plan	The output of this result area was changed from the original ambition of developing an IWRM plan for Pangani Basin, to an assessment of groundwater resources as an input to IWRM plan that will now be for the entire Pangani Basin to be funded through WSDP.		Not Applicable	Not Applicable	
4.4 Lessons in IWRM planning in Pangani Basin extracted and disseminated to Ministry and other basins	The output of this result area was changed from the original ambition of developing an IWRM plan for Pangani Basin, to an assessment of groundwater resources as an input to IWRM plan that will now be for the entire Pangani Basin to be funded through WSDP.		Not Applicable	Not Applicable	

Conclusions

The outcome of this result area was changed from the original ambition of developing an IWRM plan for Pangani Basin, to an assessment of groundwater resources as an input to IWRM plan that will now be for the entire Pangani Basin to be funded through WSDP.

Recommendations

The PBWB should be assisted to improve its data and information base in order to deliver the original ambition of developing an IWRM plan for whole of Pangani Basin.

Result 5: Project implemented effectively and efficiently to the satisfaction of all stakeholders.

This result area concentrated on the coordination and operational aspects of the project.

Annex 5 gives a summary of the activities which were to be implemented in order to achieve the targets of Result Area 5, as indicated in the Project's merged LFA.

Achievements
This Result Area was designed to deliver the following outputs:

- Efficient systems and strategies supporting the project
- Key stakeholders aware of project progress and offer steering and guidance to implementation.

Under this Result Area, the Project managed to achieve the following outcomes:

- Project Implementation Manual developed;
- All human resources to support the project deployed;
- Multi-year work plan and budget for the project prepared;
- Progress reports on the project implementation produced and disseminated to stakeholders;
- Mid-term Project Review carried out and most of its recommendations implemented;
- Partners and Steering Committee Meetings convened to plan, review and provide guidance on the project.
- M&E for the Pangani Basin finalized

Rating

Outcome	Observations	Conclusions	Rating		Recommendations
			Achieve objectives	CC Adap-tation	
5.1 Efficient systems and strategies supporting the project	1. The Project developed a project implementation manual (PIM) to guide recruitment, procurement, financial management, planning, monitoring &	The PIM was endorsed by project partners	S	Not applicable	Recruitment, procurement, financial management, planning, monitoring & evaluation to continue along the lines proposed by PIM Future interventions in water

	evaluation 2. SNV was commissioned prepare report on guidelines for gender mainstreaming.				management to be guided by the guidelines for gender mainstreaming.
5.2 Key stakeholders aware of project progress and offer steering and guidance to implementation	The Project fielded an M&E consultancy which identified a number of areas where skill building was deemed necessary and should be part of the M&E capacity building plan. The M&E study recommended at the onset that the skills building shall be part of the process of M&E system implementation in the future as an initial stage setting even before training on applications of the templates on M&E system. 2. The project conducted work planning and review workshops. 3. Mid-term Project Review carried out. 3. Conducted quarterly partners progress review meetings	Basic skills identified included IWRM and CC, M&E specific skills, professional skills such as creating knowledge narratives on impact, and cross cutting issues such as gender. Progress reports on the project implementation produced and disseminated to stakeholders; Most of the recommendations implemented	S	Not applicable	Continue with efforts to build the capacity of stakeholders to implement the M&E system

Conclusions
Basic needs for capacity building identified in IWRM and CC, M&E and cross cutting issues such as gender.

Recommendations
Future interventions in water management to be guided by the guidelines for gender mainstreaming, and to continue with efforts to build the capacity of stakeholders to implement the M&E system

3.3.2 Results with respect to Climate Change adaptation

The TE rates results with respect to Climate Change adaptation to be Satisfactory (S)

The results are rated Satisfactory (S) because the implemented pilot adaptation activities have assisted in designing flow scenarios for water allocations (this is used by Basin and partners), and results have been disseminated at different levels including a national workshop in Morogoro that involved different local experts. Vulnerability Assessment have helped to raise awareness of communities, equipped them with systematic screening procedures and have

generated community based adaptation actions which are being mainstreamed through annual work plans for LGA.

As noted in section 3.3.1 the Project's results with respect to Climate Change adaptation were as follows:

- A detailed Climate Change modeling study was carried out in the Pangani River Basin;
- Climate Change vulnerability assessments were conducted to identify adaptation activities that can increase community resilience to Climate Change impact as predicted through the Climate Change modeling and community observations.
- Identified adaptation activities were piloted through funding from UNDP (through the Pangani River Basin Management Project (PRBMP), Climate Change and Development Project (CCDP) and the Global Water Initiative (GWI).

3.3.3 Contribution to upgrading skills of the national staff

It is expected that the training of PBWO staff under the Project will lead to better performance of their duties in the future, and the results has started to be seen, evidenced by better work plans, etc.

4 Assessment of Project against Evaluation Criteria

In this chapter, the TE presents its assessment of the Project against the evaluation criteria given in the TOR.

4.1 Design and the Logical Framework

The TE rates the project design has been marginally satisfactory (MS):

The two Project documents prepared by UNDP/GEF and EU are based upon a solid problem and stakeholder analysis and define the objectives and the outputs in a clear manner. However, proposed means of verification, verifiable indicators and financial reporting based on the five result areas are not clearly defined and actualized in the merged LFA which has made it difficult for the TE to measure development impacts.

4.2 Relevance

The TE rates the relevance of the Project to be highly satisfactory (HS):

Relevance assesses the design compared to the Tanzanian development policies and the problems of the target group. The Project is in line with the Tanzanian policies on support to the water sector. The actions under the Project will clearly make operational the main components of the Water Act 2009 and the sector-wide approach to planning. It also contributes to Tanzania's implementation of the National Poverty Reductions Strategy and Millennium Development Goals.

The Project has been highly satisfactory in its emphasis to empower the PBWB to promote local identity and ownership of the outcomes. In addition, representation from MoW was catered for during Project milestone events to reinforce the sense of institutional ownership and to facilitate institutional learning and the exchange of experience among basins.

4.3 Compliance

The TE rates the compliance of the Project to be satisfactory (S).

The PMU complied with the Project design to a high degree. It had adequate resources and the effort to comply with the intension of the Project by looking for more effective ways of achieving the targeted results has been demonstrated for instance by reallocation of funds to the groundwater assessment and collaborating with WSDP to prepare IWRM for the Basin. The PMU has tried to address the problems of the resource poor and vulnerable water user groups. However, because of limited time the outreach to vulnerable water user groups in the basin and success has been moderate.

4.4 Efficiency

The TE rates the efficiency of the Project to be marginally satisfactory (MS).

Efficiency assesses achievements and results as compared to the input of resources in order to establish how economically resources have been converted to results. At the time of the Mid-term Evaluation (2008) it was noted that it was very difficult to assess the Project's efficiency due to the lack of consistent planning and reporting formats. Whereas during the Mid-term Evaluation it was found that the capacity and capability of Project partners such as SNV did not meet the expectations of the project management, this situation was subsequently rectified, and a well-experienced staff from SNV and PBWB were seconded to the Project.

The Log Frames were merged in 2008 but the Project continued to provide separate financial reports to each donor which had different format. Data for the Project's actual budget and costs for activities under each of the five main result areas are not available for the TE to properly evaluate the Project's efficiency.

4.5 Impact

The TE rates the impact to be satisfactory (S)

The Project has been operating without reporting on actualized and verifiable (SMART) impact indicators based on major outcomes as agreed in the merged LFA. However, a lot has been documented in various publication and reports about the contribution made by PRBMP in Pangani River Basin in particular and in Tanzania in general. The capacities of PBWB and LGAs have been improved (by result 2) in terms of water governance and CC impacts, modelling, assessments and adaptation (by result 3). PBWB also gained a lot in result 4 by way of identifying their needs and strategizing bridging gaps and also in terms of understanding groundwater resources including provision of working tools e.g. expensive software, computers and pump test unit that many basins don't have.

4.6 Effectiveness

The TE rates the effectiveness to satisfactory (S)

Effectiveness assesses the extent to which the Project strategy has been implemented and results realized and/or not realized. It also explores the extent to which the organisational set up facilitated or hindered implementation and achievement of results. The overall conclusion is that the effectiveness of the Project is satisfactory because of the benefits generated in terms of improved methodologies and enhanced capacity of the various stakeholders and water user groups, and in terms of well prepared EFA, CNA, ToT programmes and M&E study that increased awareness at decision makers in the Basin, local governments and other basins.

4.7 Sustainability

The TE rates the sustainability to be satisfactory (S):

Several of the outcomes of the Project tested aspects like for instance institutional arrangements of the National Water Policy and Sector Strategy. Some of the activities focused on IWRM planning and strengthening the capacity of the basin water office to coordinate such work. In this way, the BWO is prepared to continue this work. It also built the technical capacity of the BWO and the ministry to conduct flow assessments. In this way, the BWO and MoW are prepared to continue this work. The CWFs established in Result 2 are new institutions which are provided for in the policy, strategy and legislation. The design of these forums will be of special interest to other basins throughout the country.

The Project was designed to cater for the priority needs of the MoW and BWO in water governance. The emphasis of the Project was to empower the PBW office and for this reason it has key leadership roles in all of the outcomes. These aspects promote local identity and ownership of the outcomes. In addition, representation from the MoW was catered for during Project milestone events to reinforce the sense of institutional ownership and to facilitate institutional learning and the exchange of experience among basins.

Finally, the Project prepared an exit strategy to provide guidance on the use of Project outputs after the closure of the Project; a roadmap for continuation of outcomes from the Project and to identify sources of support for sustained implementation of actions beyond Project life.

The Project's sustainability is assessed according to technical, institutional, environmental and economic/financial aspects.

Technical sustainability: This is related to the understanding of environmental, economic and social implications of different river flow scenarios; the interpretation of the scenarios and how they are feeding into the overall IWRM planning process. *Rating: Satisfactory.*

Institutional sustainability: It is expected that the training of PBWB staff will lead to better performance of their duties in the future, and the results has started to be seen, evidenced by better work plans, etc. The establishment of the Sub-catchment Forum in Kikuletwa will support the Government efforts in establishing decision-making bodies at lower levels, and as such a structure is regulated by law (the new Water Bill), it is likely to be sustained once the operations can be secured by income through water user charges. The TE notes that more outreach and capacity building work needs to be done at the lower water user groups and other Sub-Catchments beyond Kikuletwa. It is noted that the project enabled actual implementation of the water policy which in itself builds institutional capacity as there is an example and precedent to follow now. Also projects such as GWI are continuing to build the institutional capacity of PBWB using the outcomes of PRBMP. Furthermore, the experiences have contributed to the design and implementation of similar projects with government in Kenya, Uganda and Mozambique specifically through the Water and Nature Initiative and Global Water Initiative. *Rating: Satisfactory.*

Environmental sustainability: Pilot adaptation activities have assisted in designing flow scenarios for water allocations, and results have been disseminated at local and national levels

including a national workshop. Vulnerability Assessment have helped to raise awareness of communities, equipped them with systematic screening procedures and have generated community based adaptation actions which are being mainstreamed through annual work plans for local governments. *Rating: satisfactory*

Economic/financial sustainability: The National Water Policy (2002) promotes financial and administrative autonomy of the Basin Water Boards. The Water Sector Development Programme (WSDP) indicates that by 2015, all 9 Basin Boards should be autonomous - administratively and financially – and for that reason the PBWB needs to start having financial sustainability plans. The new institutional set-up for water resources management has a wide range of stakeholders who present both opportunities and challenges to Basins Boards and with support from the Project PBWB developed a Business Plan in 2009 covering the period 2010/11- 2013/2014 to support it to become autonomous by the year 2015. The Business Plan indicates organizational and capacity building as a priority issue under which an institutional framework will be explored. The Project has supported building up the capacity of the PBWB to comply with the new institutional set-up. *Rating: Satisfactory*

4.8 Replication Approach

The TE rates the replication approach to be Satisfactory (S):

There is evidence that Project activities have attracted attention from other Basins within Tanzania and beyond its borders, especially with regard to methodologies for conducting Environmental Flow Assessments and the formation of Water User Associations.

The activities the Project has been implementing represent the core strategies of the 2002 National Water Policy, and Act No. 11 now is facilitating its implementation. The enactment of Water Resource Management Act No. 11 (in 2009), provides for institutional and legal framework for sustainable management and development of water resources; to outline principles for water management; to provide for prevention and control of water pollution; to provide for participation of stakeholders and the general public in implementation of national water policy, etc,[10] gives enough back-up for sustainability and replication of Project activities.

Institutional wise, the establishment of permanent links with the PBWB and district councils was a strategic action to do as those were key influencing actors in the activities of the project. The formed and supported DFTs and WUAs are enabling institutions for sustainability of the project activities, beyond the project life time.

[10] URT, The Water resource Management Act No. 11 of 20090001

5 Recommendations

The TE has the following recommendations for future follow-up to the stakeholders:

5.1 *Corrective Actions for Future Projects*

The five results areas are rather optimistic in their expectations, and the execution also is more focused on developing methodologies and strategies which aims to be up-scaled across the basin rather than trying to cover the whole or most of the basin from day one. For instance result 2: "Water users strengthened and empowered to participate in IWRM and Climate Change adaptation processes through dialogue and decentralized water governance". The TE finds that if the description had been: "*Methods and strategies* for water users to participate in IWRM and Climate Change adaptation processes in dialogue with local governance strengthened" then the Project execution would have been more in alignment with the actual achievements recognized by VPO and MoW. As an initial phase the Project has been focusing on identifying and developing methods and strategies and future activities should support to further build up and get all the water user groups and WUAs accountable and operational.

The PRBMP implemented pilot activities at community level based on vulnerability assessments to enhance the rural communities' capacity in terms of resilience and capacity to adapt to climate change through a range of climate change adaptation and mitigation activities. However, the pilot activities started rather late and even though appropriate committees were set up to operate and manage the infrastructure developed through the pilot projects, the community organisation are not operating with functional management systems. They need follow-up and support to further develop their capacity to operate and maintain for instance water supply systems and infrastructure established through the pilot activities.

In the following we have listed recommendations from the above sections:

Project design

- To undertake annual joint donor-partner review of project performance i.e. results, progress, challenges, developments in risk factors, need for adjustment and of developments in the project context. The review also serves as a quality assurance of the overall monitoring. Against this background, the review issues recommendations on further project implementation. The review should as a minimum be based on progress reports including performance assessment framework; financial reports based on result areas; draft annual work plan and budget including performance targets; a table indicating follow-up to the process action plan of the last review; and up-dated risk analysis.

- Annual review including the following elements: (i) Sector development of relevance to the project framework, including progress in relation to key sector indicators and target group; (ii) Assess follow-up on recommendation from the last review;(iii) Progress compared to plans within an agreed performance assessment framework and indicators including assessment of the set of output indicators registered in LFA; (iv) Assessment of assumption and risks;(v) Project disbursements and expenditures, as well as the relationship between physical and financial progress; (vi) Assessment of developments in the planning framework context, including assumptions and risks as formulated at project inception; (vii) Progress in

capacity development; and (iix) Considerations of gender and environmental issues with reference to Gender, Climate Change and Environment baselines.

Alignment to National Policies

- To implement follow-up projects using the governmental structures for transfer of funds to PBWB. However, if efficient transfer mechanism cannot be ensured the donor may transfer funds to a project specific bank account (which removes the project from GoT procedures) but in all other ways find ways to mimic (or shadow) the GoT management and other systems in as many aspects as possible without losing the effectiveness and accountability of the project. These implies using the donor system in the initial phase and then step by step align management and other procedures to the GoT system as using a minimum of safeguards where necessary.

Implementation Approach

- To use the PBWB's action plan for 2011/12 as detailed with performance indicators, targets, and activity plans as a model to start-up for improved planning in the basins.

- To further develop and improve accountable working tools for planning and M&E together with the WUAs.

- To make the website an effective tool for provision of information and as a channel for an accountably service delivery as for instance online interactive applications for water use permits or water discharge permits.

- To enforce the institutional framework of PBWB as indicated in the Capacity Needs Assessment report prepared in 2010.

- To train and build up the capacity of the staff to fulfill its future role and mandate of PBWB as indicated in the PBWB business plan.

Monitoring and Evaluation

- To empower grassroots organisation to support the service- and monitoring function of the PBWB by supporting the formation of grassroots associations (water user associations, catchment and sub catchment committees) and coordinating them. This also include building the capacity of local government authorities;

- To develop a monitoring and evaluation database to provide the PBWB management with accurate information for decision making. It should be based on PBWB's business plans, LFAs and IWRM plans, to track implementation progress against targets, capture results against indicators and provide information about impacts in comparison to baseline surveys.

Stakeholder Participation

- Follow-up on ToT programme to ensure an effective water service, and the ability and capacity of WUAs and CWOs efficiently to manage water permits and to collect water fees.

- To further strengthen the capacity of PBWB to develop strategic networks and linkages to a diverse range of stakeholders and partners, and to establish a proper –and long term based- orientation of the Catchment Water Committees and District Facilitation Teams in all sub-basins to effectively engage stakeholders on broader IWRM issues

Financial Planning

- To enforce the PBWB's capacity to use activity based planning and budgeting to strengthen its planning and budgeting capacity
- To undertake annual joint donor-partner review of project performance

5.2 Actions to Reinforce Initial Impacts from the Project

Water user associations have been set up and their members trained. Efforts should be kept up to support the full functioning of these groups, and to further develop the forum that is expected to guide the WUAs.

The organizational structures of WUAs have been put in place, and efforts now should focus on to develop additional Climate Change adaptation structures and approaches in order to use the available water in a more rational manner, such as small water storage dams, water flow controlling sluices, the capture and use of wastewater for irrigation, water pricing and cost recovery, capture and storage of surface runoff, reduce pollution, etc.

The PBWB should ensure that the Environmental Flow Assessment scenarios will be up-graded; the trained staff will continue to make good use of the facility and will continue to develop their practical skills in using it to the benefit of the integrated use of the resources in the basin. The PBWB must ensure that there are appropriate computer facilities and accessories to run and keep up the developed scenarios by the staff there were trained for that purpose.

5.3 *Proposals for Future Directions*

The main challenge of PBWB will be to sustain and further build on the activities that were carried out under the Project:

5.3.1 Operationalisation of Water User Groups

As water user associations have been set up, and their members trained, efforts should be sustained to support the full functioning of these groups, and to further develop the Water Catchment Forum that is expected to guide the WUAs.

Main activities:

- Update the inventory of existing formal and informal water user groups former prepared by the Project
- To assess the knowledge base (focus on IWRM)
- Design a framework to bridge the gap, implement it and link the group to the existing WUA
- Empower the WUA and WUG by exposure visits and provision of tools
- Prepare and carry our simple research on impacts and effectiveness of these community institutions to inform policy
- Create and/or join collisions and forums to voice community needs
- Lobby for establishment of catchment forum and assist in operationalising

5.3.2 Strengthening the Capacity of the PBWB

The main challenge of PBWB will be to sustain the activities that were carried out under the Project, to make good use of the acquired knowledge and achievements, and to further build on this capital. The PBWB should ensure that the EFA scenarios and groundwater assessment database and model will be up-graded; the trained staff will continue to make good use of the facility and will continue to develop their practical skills in using it to the benefit of the integrated use of the resources in the basin. The PBWB must ensure that there are appropriate computer facilities and accessories to run and keep up the developed scenarios by the staff there were trained for that purpose. Main activities:

- Strengthen capacity to consolidate results of projects and develop new proposals for funding
- To undertake a study to develop an inventory of different interventions within the basin (private sector, research institutions and projects/programs)
- Create partnership and exchange of knowledge with the above
- Collect and analyse samples at each of the established site (EFA and Groundwater Assessment) and expand data acquisition at strategic points
- Rehabilitate, install and operationalize monitoring networks based on basin needs
- Unpack the information to popular language understood by different groups (Policy/decision makers e.g. politicians, local water users, peasants)
- Raise awareness of communities through WUG/WUA to guard monitoring stations

5.3.3 CC Adaptation

To increase Climate Change adaptation capacities and improve livelihoods efforts with focus on developing additional climate change adaptation structures and approaches in order to use the available water in a more rational manner, such as small water storage dams, water flow controlling sluices, the capture and use of wastewater for irrigation, water pricing and cost recovery, capture and storage of surface runoff, reduce pollution, etc. In addition, investment in ecosystem based adaptation approaches which improve water quality and quantity; this can include river bank rehabilitation, use of wetlands for storage and/or wastewater treatment, protection of water sources and forest catchment areas that provide water. Main activities:

- Carry our an intensive study of runoff storage potentiality and options (building on available results)
- Pilot efficient water use technologies e.g. drip irrigation
- Pilot use of biogas as an alternative to serve the forests
- Prepare forum for community knowledge sharing

5.3.4 Conflicts over Water User Rights

The PBWB operates within an environment which has complex and evolving networks and relationships. The basin is overexploited and can no longer cope with the ever rising demands.

This situation has led to different types of conflicts, namely between (i) hydropower and irrigation, (ii) pastoralists and irrigators, (iii) agriculture and environment, (iv) hydropower and the environment, and (v) between farmers themselves. In order to mitigate these conflicts, and ensure sustainable management and utilization of the water resources in the basin, innovative approaches are required for involving water users and other stakeholders in managing and developing the water resources through participatory forums and to design an operational framework for regulation of conflicts. Main activities:

- Carry out a study focusing on the types of conflicts, solution undertaken and potential for innovation
- Assess the comprehensiveness of the provisions of Tanzania water legislations,
- Assess conflict resolution skills of the basin (if need be)
- Prepare conflict resolution module and train basin staff and selected WUA members

5.3.5 Demarcation of River Buffer Zone

In Tanzania there are three types of lands which are managed by different authorities following description provided by specific laws in each sector. These are: Reserved land, General Land and the Village land. The latter refers to all lands inside the boundaries of a registered and designated village which the village councils are given power to manage but not owning it. This land is governed by the Village Land Act No 5 of 1999. While exercising their lawful mandates, villages along the Pangani River have allocated a number of farms along the river. The situation is increasingly worsening with increasing tendency of ignoring conservation/environmental issues which are in some cases very apparent. Having experienced that, the Pangani Mainstream Water Users Association intends to facilitate demarcation of the 60 m from the river bank.

The main purpose of the proposed pilot project is to (i) to guide riparian communities on the zones beyond which they can lawfully earn their living; (ii) to restore river ecosystems; and (iii) to reduce sediment load contribution to the river and downstream hydropower dams.

The proposed project is intended to be carried out in partnership with PBWB, riparian district authorities and IUCN who have diverse experience in conducting awareness programs. At the end of the project the nearby river ecosystem is expected under restoration, the erosion and sediment load to the river reduced and sustainable farming practices identified and practiced close to the river enhancing livelihoods of riparian communities.

5.3.6 Women Empowered to Participate in Water Resources Management

The National Water Sector Development Strategy (WSDS 2006-2015) has highlighted the importance for meaningful stakeholders' participation in water resources management. It clearly states the need for promoting women in the wise governance of the resource, "promote the involvement of women and youth in water resources management at all levels". Tanzania National Water Policy (NAWAPO, 2002); Water Sector Development Program (WSDP, 2005); the Strategy (WSDS, 2005-2015) and the Water Resources Management Act No 11 of 2009 also insist on the participation of women at all levels of water resources management. In addition, the Dublin principles of IWRM captured in the water policy, clearly states that:

- Fresh water is a finite and vulnerable resource, which is essential to sustain life, development and the environment
- Water management and development should be based on a participatory approach, involving users, planners, and policy makers
- Women play central role in the use, management and protection of water resources and thus should be involved fully in the decision making process
- Water has a value in all its competing uses

Pangani Basin Water Board (PBWB) have facilitated sessions on raising awareness of communities in water resources management in the basin and formed six Water Users Associations (WUAs). These associations are the formal community institution to represent water users in the management of water resources that seeks to decentralize and devolve decision making to the lowest practicable level, with stakeholders participating in the planning, design and implementation of the management actions. Above all, the Water Resources Management Act provides for the implementation of the Dublin IWRM principle in that the minimum number of women to be one third of the members at all levels of water resources management i.e. WUA, catchment/sub catchment water committee, Basin Water Boards up to National Water Boards. Pangani Basin Board has so far worked to meet this provision i.e. of the six formed WUA; there is (year 2011) an overall of 39% female for WUA Management Committee members (six people as par the act) and 37% of entire WUA members.

Experience of forming WUA in the Pangani Basin acknowledges a copacetic increase in number of women in meetings and workshops. However, very few voices are recorded to come from female members (especially young ones). This is partly due to cultural impediments that suppress the voices of the youth and most counterproductively female youth which thwart the intended involvement of all gender groups. The purpose of the proposed initiative is:

- To empower female member of the community on issues of Water Resources Management, conflict management/resolution and negotiation skills over water resources
- To improve the efficiency and effectiveness of WUAs by building female understanding
- To establish an entry point of reaching the youth group
- To put policy into practice and so generate lessons and inform policy level

At the end of the project it is expected that:

- At least 3 informed female focal points are in place at community level
- Efficient and effective women participation in 6 WUAs is realized
- Lessons are generated to inform others at local-and national level

6 Lessons Learned

With regard to the design of the project the merged LFA has been revised several times but verifiable indicators based on the two project documents were not revised and included in the merged LFA. The lesson for future projects of this kind is the need to establish verifiable (SMART) indicators which are linked to the impact monitoring system at the design stage.

The Project has been highly satisfactory in relation to Tanzanian policies – its emphasis to empower the PBWB sought to promote local identity and ownership of the outcomes. In addition, representation from MoW was catered for during Project milestone events to reinforce the sense of institutional ownership and to facilitate institutional learning and the exchange of experience among basins.

The Project prepared an exit strategy to provide guidance on the use of Project outputs after the closure of the Project; a roadmap for continuation of outcomes from the Project and to identify sources of support for sustained implementation of actions beyond project life. It is also expected that the training of PBWB staff will lead to better performance of their duties in the future, and the results has started to be seen, evidenced by better work plans, etc.

The establishment of the Sub-catchment Forum in Kikuletwa will support the Government efforts in establishing decision-making bodies at lower levels, and as such a structure is regulated by law (the 2009 Water Act), it is likely to be sustained once the operations can be secured by income through water user charges.

The Project contributed notably to the promotion of women's participation in the IWRM, especially after a community officer was included in the Project team.

With regard to specific result areas of the project:

- The different scenarios developed under **Result Area 1** were based on a limited data base which was partly due to economic difficulties in Tanzania of the 1970s – 1980s. Hence, it is recommended that the PBWB should continue to improve the quality of data and information on the quality and quantity of water in the basin in order to have flow scenarios.
- Under **Result Area 2** one of the major outcomes was the advice to make water management a permanent agenda item in the local government structure and the need for PBWB to seek for audiences with councilors (full councils) to get the buy in of the necessary decision makers.
- **Result Area 3:** Further support needed to PBWB to design and to fine-tune the linkage between climate change, efficient water management and agricultural practices through community based pilot projects
- **Result Area 4:** Continue with efforts to make PBWB a strong autonomous organisation in line with the Water Act a.o. by improving its data and information base in order to develop an IWRM plan for the whole of Pangani River Basin