



NILE RIVER BASIN

Enhancing the adaptive
capacity of communities to
climate change through IWRM,
Mpanga Catchment of the
Nile Basin in Uganda



UNEP



SWEDEN



NILE BASIN INITIATIVE
Initiative du Bassin du Nil

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Acknowledgements

UNEP would like to acknowledge the financial support from the government of Sweden that supported the implementation work in Mpanga Catchment area. UNEP also acknowledges the implementation undertaken by PROTOS and also the cooperation of the local community in the Mpanga catchment. We would also like to extend our sincere gratitude to the Government of Uganda for their support.

Acronyms & abbreviations

ASAP	Adaptation Strategy and Action Plan
BMU	Beach Management Unit
CBIWRM	Catchment Based Integrated Water Resource Management
CC	Climatic Change
CCA	Climate Change Adaptation
CMC	Catchment Management Committee
CMO	Catchment Management Organization
CMP	Catchment Management Plan
COP	Conferences of the Parties
CTC	Catchment Technical Committee
DWRM	Directorate for Water resource Management
MWE	Ministry of Water and Environment
EIA	Environmental Impact Assessment
IK	Indigenous knowledge
IWRM	Integrated Water resource Management
JESE	Joint Effort to Save the Environment
LAGBIMO	Lake George Basin Integrated Management Organization
MOU	Memorandum Of Understanding
MMU	Mountains of the Moon University
MWE	Ministry of Water and Environment
NBI	Nile Basin Initiative
NWSC	National Water and Sewerage Corporation
PSC	Program Steering Committee
RCA	Association of the Rwenzori Community
TSU	Technical Support Unit
UWASNET	Ugandan Water and Sanitation Network
UWP	Ugandan Water Partnership
WAP	Water Action Plan
WRM	Water Resource Management
WMZ	Water Management Zone

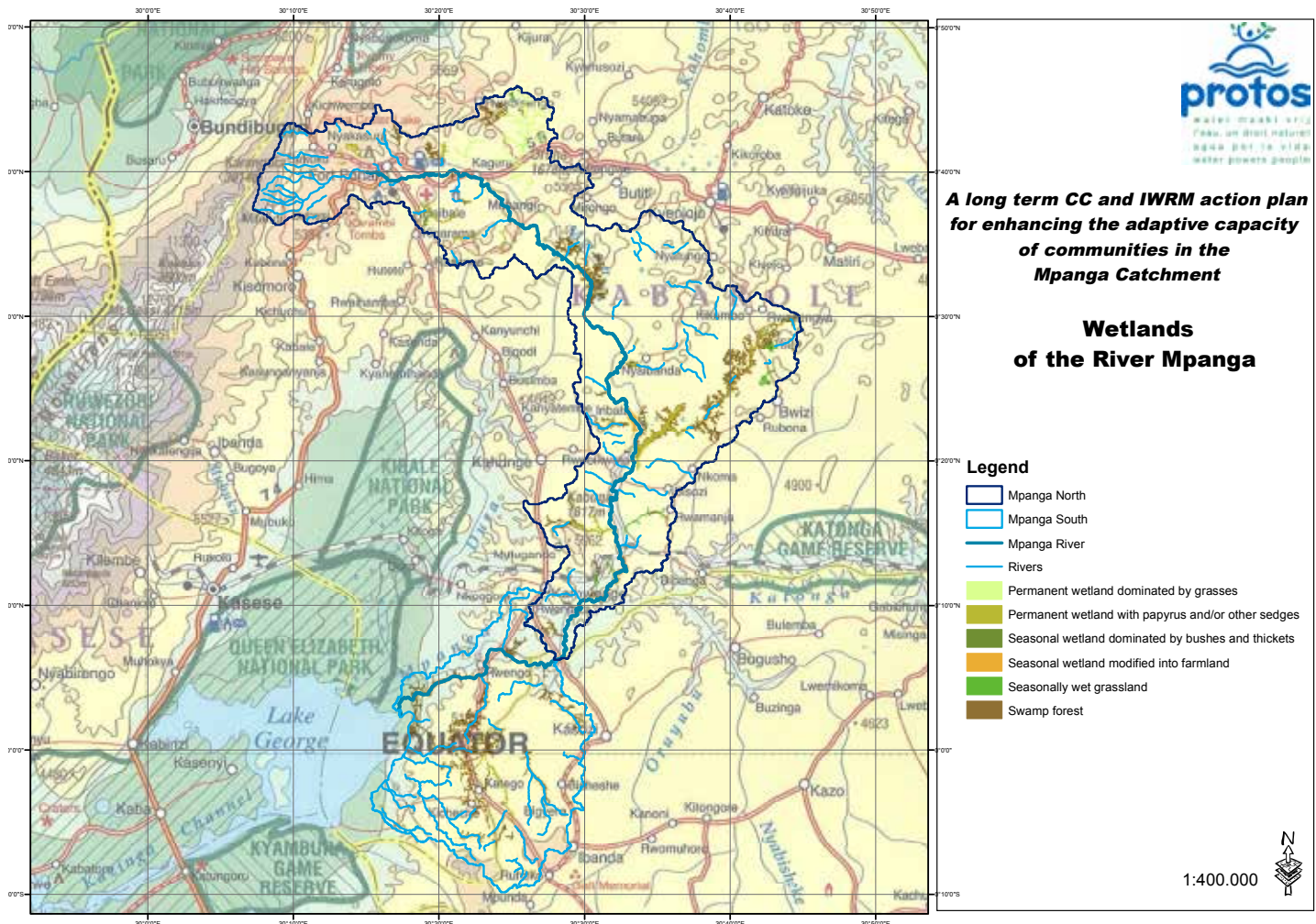
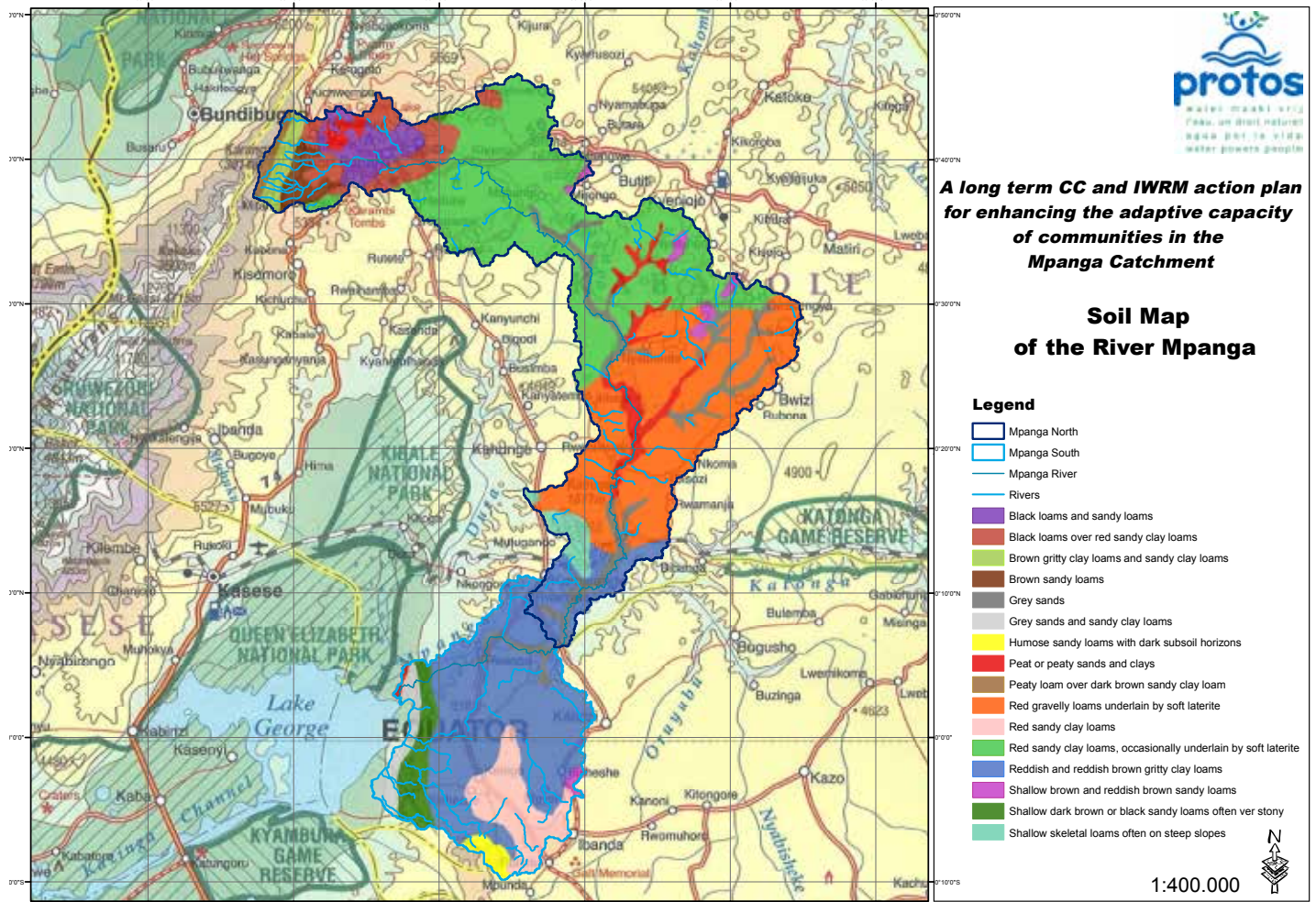


Figure 1: Project maps



1.0 Project summary

The Project - supported by UNEP - was implemented in the upper Nile Basin, in Uganda. The Mpanga catchment where activities were rolled out is part of the Lake George Basin / The Lake Albert Water Management Zone and is located in the west of the country. This Mpanga catchment has an estimated surface of approx.4700 km², and is characterized by a diversity of landscapes and high ecological significance. The area stretches over the territory of these 3 Districts.

A pilot program on Climate Change Adaptation took place at the end of 2011 until end of 2012. The program focused on improved water management as a tool for Climate Change Adaptation and was based on previous efforts that had been done by PROTOS and the Directorate for Water Resource Management (DWRM), known as one of the main National IWRM pilots. This IWRM pilot had been set up since 2006 and has been used as an input in the current National Policy on Catchment Based Water Resource Management.

With the support of UNEP, aspects of adaptation were integrated in the ongoing efforts which created the opportunity to evaluate this new policy on its relevance to help come up with field intervention to increase the adaptation capacity of communities.

The project was executed in a partnership between UNEP, the Ugandan Ministry of Water and Environment (DWRM) and PROTOS. Field activities were identified, planned and implemented with involvement of local stakeholders (such as local leaders) and with support of other local implementing partners (NGOs and CBOs).

In accordance with the program proposal the activities included different aspects:

Assessment on Climate Change Adaptation

An assessment was conducted within the catchment including an inventory on current ecosystem related adaptation issues. The assessment was done at an overall level and 8 specific zones (hot spots) were identified where more in detail work was done. The result of the assessment has completed the water resource analysis that was done in the past. This has allowed integrating adaptation related issues in the Catchment Management Plan (CMP) for the Mpanga catchment. The assessment was performed by the Mountains of the Moon University with capacity support and coordination from PROTOS.

Sensitization

Sensitization campaigns on improved water management in general, and Climate Change

Adaptation specific were set up within the catchment at different levels. First a tool was developed for community sensitization using the mobile cinema approach. In this program, communities were shown a documentary that contains testimonies of different water users within the catchment. During and after these sessions community members were enabled to provide input and comments in order to capture their knowledge and experience. The tool for organizing the mobile cinema was developed by KRC (the Kabarole Research and Resource Centre) and field work was done by Joint Effort to Save the Environment, The Association of the Rwenzori Community and Tooro Botanical Gardens.

Different meetings were held with key stakeholder representatives and especially local government. During these meetings –next to the planning and identification activities – a lot of emphasis was given to sensitization.

A program for sensitization within schools was rolled out within the catchment. The sensitization was done using a tool that was specifically developed for this purpose. The field work was done by a local organization called The Association of the Rwenzori Community.

Capacity building

Trainings were organized on Climate Change Adaptation and tools for representatives of different stakeholders, including local government were developed. The training was organized by PROTOS and facilitated by consultants.

Integrated action planning

A lot of emphasis was put on the integrated planning for action and especially the involvement of local communities. As a follow up of community sensitization sessions, local action plans were made at community level. This process was facilitated by Joint Effort to Save the Environment who developed

With the support of UNEP, aspects of adaptation were integrated in the ongoing efforts which created the opportunity to evaluate this new policy on its relevance to help come up with field intervention

a specific tool for this work. These micro action plans were bundled per District and, based on an evaluation of the different proposed actions; priorities were selected to be implemented and/or piloted within this program.

At a higher level the micro catchment plans that were proposed by the communities were brought together in an overall action plan for the catchment. This Catchment Management Plan (CMP) includes next to these micro catchment plans proposals for up scaling of successful pilots, enlarged initiatives for awareness and sensitization campaigns, proposal for new pilots etc. The CMP was a product of the partnership between PROTOS and the DWRM and is currently one of the first CMP put in practice within Uganda that is in line with the new community based IWRM policies.

Piloting

As mentioned above, different pilot programs were rolled out. These pilots were mainly steered by the Districts and their relevant departments under coordination and supervision of PROTOS and the DWRM. The activities related to:

- Tree planting for restoration of degraded ecosystems;
- Tree planting for river bank protection;
- Introduction of new species that provide anti erosion advantages and are less dependent on rain patters (improved mango trees, wild coffee);
- Anti-erosion measures (restore of sliding footpaths, terracing demos sites);
- Improved waste management in urban areas;
- Collaborative wetland management practices (fishpond and restocking of fish);
- Riverbank protection by demarcation of limited access areas;

Data management

All outputs of the program are documented by reports and a 30 minute DVD documentary was made. The geographical data produced during the program was supposed to be converted into GIS maps that were accessible on remote. Due to delay in the start-up of the activity and the availability, control and processing of data for direct input the data center could not be launched within the timeframe of the program. All the collected data is temporarily available on the PROTOS website: <http://www.protosh2o.org/our-programs/oeganda/unep>, and will be also stored in a later stage in DWRM environment.



2.0 Project outcomes

The project has allowed testing the inclusion of Climate change adaption efforts within the IWRM planning policies that are being piloted. As a result the CMP was revised based on the outputs of this program.

New tools were developed to improve bottom up planning processes and experience was gained on articulation of the roles of the Districts in the roll out of Climate Change Adaptation action plans. At the same time the capacities of key stakeholders were strengthened.

Due to the implementation of the sensitization campaigns and the pilots the adaptive capacity of communities was increased.

Recommendations & way forward

The program was rolled out during one year and was considered as a new component within the ongoing IWRM efforts. It has shown that the time frame of one year was rather short as it concerns a quite complicated matter and bottom up planning processes have been shown to need a lot of time. Especially field piloting becomes challenging within a one year time frame, especially when the identification and planning is to be done in an effective and participatory way.

Related to the outcomes of the activities and their long term impact it is at this stage still difficult to monitor as some pilots have just ended recently or are related to initiatives that are expected to show

only impact over a longer period.

The micro catchment planning processes created a lot of expectations within communities which can only be addressed if the overall CMP can be rolled out or at least more pilots can be launched. At the same time different pilots were proposed that are not yet tested due to their lower significance or the fact that they could not fit within the program timeframe and or budgets.

PROTOS is currently still active within the catchment with his IWRM program in collaboration with the DWRM and funded by the Belgian DGD with emphasis on access to drinking water and sanitation. Within the context of this long term cooperation between PROTOS and the DWRM, the outcomes of the UNEP supported pilot can be further monitored and seek for opportunities to further roll out the proposed CCA actions within the catchment.

In general it can be concluded that the program was successful and most targets were reached within the available timeframe and budgets. Specific recommendations were done and a way forward was proposed. The pilot and its outcomes were discussed at National level in the Thematic Team on IWRM hosted by the Ministry of Water and Environment. Mainly the new approaches on community involvement by the use of specific tools for sensitization, capturing indigenous knowledge and bottom up planning processes were considered as practices that can be integrated within the national policy.

3.0 Introduction

Part of the Adapting to climate change induced water stress in the Nile River Basin project, two country demonstration sites were selected notably Ethiopia and Uganda.

In the case of Uganda, the Belgian NGO PROTOS and the Directorate of Water Resources Management (DWRM) of the Ministry of Water and Environment (DWE) in Uganda were responsible for carrying out one of the demonstration sites. This included using tools of Integrated Water Resource Management (IWRM) and CCA to increase the resilience of the local communities in Fort Portal Municipality and in rural areas in the Districts of Kabarole, Kamwenge and Kyenjojo.

The project started end of 2011 and was mainly designed to integrate the aspects of CCA in the ongoing IWRM planning activities that took place within the Lake George Basin and Mpanga subcatchment since 2006. In a partnership between the Ministry of Water and Environment (DWE) and PROTOS a proposal was submitted to UNEP.

In 2012, the program was finally rolled out, coordinated by PROTOS and the DWRM with support from UNEP. The key actors formed a steering committee where PROTOS and the DWRM (mainly representatives from the Albert Water Management Zone) took a leading role and other implementing partners were involved in decision making.

The implementation itself was taken up by mainly (contracted) partners, such as local NGOs and consultants as well as specific departments within local government (mainly districts).

As the CCA was the result of the first CMP put in practice within Uganda that is in line with the new CB IWRM policies, the issue was rather new and required a new field assessment to be done in order to fully understand the challenges in its local context as well as the indigenous people knowledge that was available on ground. At the same time some tools needed to be developed to initiate the necessary sensitization on ground and to coordinate the bottom up planning processes to follow up these sensitization session



In the roll out of the pilots themselves the Districts/ Municipal Council played a key role (together with the Program Steering Committee). They were supported to initiate pilots and to follow up on them. In all cases the Natural Resource department was put in charge but often expertise from other departments was inserted (fisheries, agriculture, water).

Pilots were introduced to all districts where the Mpanga subcatchment is located (Kabarole, Kamwenge and Kyenjojo) as well as in the urban center of Fort Portal.

The detailed information of the different activities is listed below. In addition to this final report a DVD documentary is available.

Pilots have been introduced in all Districts where the Mpanga subcatchment is located (Kabarole, Kamwenge and Kyenjojo) as well as in the urban center of Fort Portal

In the chapter below the obtained results are described in summarized form. Full comprehensive activity and monitoring reports are available.

4.0 Results assessment

a. Outputs

Assessment

A baseline assessment was done and priority areas were identified. This assessment was done by the Mountains of the Moon University with support of PROTOS. Next to a desk study field work was done. For the field work questionnaires were developed and students were trained to do on site monitoring. The activity has led to an assessment for the catchment including more detailed assessments in 8 reference zones that were identified.

A monitoring visit by UNEP representative was held when pilots were being rolled out. This allowed the UNEP representative to do site visits and to meet with partner organizations that were involved in the program. Based on the visit a report with recommendations was submitted.

Sensitization

6570 people have been sensitized within the catchment on improved water management and climate change and Indigenous Knowledge was captured and described. These sensitization sessions were done using the mobile cinema approach. This activity was also rolled out using a tool developed by the Kabarole Research and Research Centre so they were at the same time able to capture people's feedback.

Twenty (20) zones were selected and communities (636 community members) were trained to map Climate change risk areas. 20 micro catchment plans were drafted.

A school sensitization program was implemented in 20 schools involving over 2000 pupils.

In many other field pilots sensitization sessions were included, these relate to radio shows on waste selection (Fort Portal), sensitization on river bank protection, signposts on roadsides with messages on riverbank protection, etc.

Capacity building

Twenty (20) Local Environment Committees that are put in place in government structures to enhance environmental sustainability at village level, have been revived and have been trained on climate change issues. These trainings were done by JESE.

Key stakeholders (Districts, NGOs, private sector, university) were trained on climate change issues and their capacity was built. The team they formed has been actively involved in critical program steps. Stakeholders had, mainly through the Program Steering Committee, high input in the drafting of the management plan and identification of pilots.

Training on Climate Change Adaptation tools was held for 26 representatives of key stakeholders (incl. local government). Based on the training a toolkit was developed.

Integrated planning process

20 zones were selected and communities (636 community members) were trained to map Climate change risk areas. 20 micro catchment plans were drafted. These micro catchment plans were incorporated in the overall Catchment Management Plan. At the same time for each community their



Local Environmental Committee was involved to further monitor on progress.

Relevant pilots were preselected and participatory action plans were drafted and approved by the CMO.

District Implementation Committees (3) and one committee for Fort Portal Municipal Council have been set up to follow up upon the pilots. PROTOS will, together with these committees do further monitoring during 2013.

A two day meeting was held in Kampala with representatives of NGOs, (members from UWASNET IWRM environment and Climate change Working Group) where different experiences on IWRM and CCA were shared. The meeting was attended by 35 people from different organisations and Government institutions.

The Mpanga Catchment Management Committee (CMO) was installed and put in charge for the long term action plan. This Catchment Management plan was made and was approved by the Catchment Management Committee. This document was the

result of all planning effort and has been compiled by PROTOS and DWRM.

Piloting

Pilots were implemented through the integrated planning processes where local government (District Natural resource Department or Environment officer) took a leading role in the planning, execution and coordination of the pilots. The process was set up as a bottom up effort and started from the micro-catchment plans that communities had made at their level.

PROTOS, together with the DWRM and with assistance from UNEP, have provided technical assistance and performed field monitoring. The pilots related in many cases to tree planting.

This activity was mainly done to protect riverbanks from erosion that are known to be under high influence of intense rains and to provide nutrition sources less vulnerable to shifts in rain patterns and their intensity. In total over 75.000 trees were planted.

Area	Interventions
Fort Portal Municipality	<ul style="list-style-type: none"> • 5,030 indigenous trees were planted to stabilize sensitive riverbanks. • 2 waste traps were installed into the river in order to trap floating waste. • A pilot on waste selection (glass separation by installation of 14 metal bins for glass waste) was done in order to build experience for further upgrade and to improve efficiency at the existing composting plant. • An old washing bay was taken out of use and was relocated to a new site where the project supported restoration of the old site and the Municipal Council invested in the new site.
Kyenjojo District	<ul style="list-style-type: none"> • One wetland (Bihehe) was restocked with 20.000 fingerlings of mudfish to preserve this important water buffer benefiting 60 households • In the same area a pilot with wild coffee seedlings (3000) was initiated. The coffee plants were intercropped with Prunus Africana (2000). The community was trained to set up a nursery to expand the pilot and received seeds (10 kg maesopsis seeds).
Kabarole District	<ul style="list-style-type: none"> • 6800 indigenous trees have been planted in the source area (on private land of 102 households) in an effort to diversify the land-use and restore the local ecosystem (especially riverbank). • The community urged for restoration of a traditional footpath that caused a lot of erosion in seasons of heavy rains. Their concern was not only related to the siltation but also to increasing safety. The footpath was restored using local labour. • In the same area farmers were trained on terracing techniques and the land of 26 families was terraced using different methods. • Farmer groups were formed and were provided with equipment. In this training effort local leaders were involved.
Kamwenge District	<ul style="list-style-type: none"> • 29,090 trees were planted in Nyabani Sub County, of which 7,455 fruit trees and 21,635 indigenous trees. 154 households and 3 schools benefitted from this. • In Nyabani 3 villages were trained on establishing germination beds and planted 9,000 indigenous trees. • 13,127 fruit trees were planted in Mahyoro Sub County of which 4,700 were planted near landing sites (also 3 women groups were trained here on grafting fruit trees). 3,110 Indigenous trees were planted on the private land of interested households. In Mahyoro 495 households and 5 schools benefitted. • In Kanara Sub County 2680 fruit trees were planted and 5,465 indigenous trees. 78 households and 3 schools benefitted. • In Kamwenge District a sensitive zone near the Mpanga riverbank was demarcated as no go zone and 5,000 fruit trees were planted around this zone.

b. Outcomes

The following outcomes were targeted

Outcome 1: A long term strategy and Climate Change Action Plan for enhancing the adaptive capacity of communities to climate change is ready to be executed in the Mpanga Catchment.

The long term action plan was made through the different planning processes and has been set up according to the newest guidelines provided by the DWRM. The plan was made by DWRM with PROTOS and was based on the different activities that were done during the project including community planning, stakeholder forums, Pilot experiences.

Especially the micro catchment plans that were made at village level were used to be integrated in the overall plan.

Outcome 2: Small scale pilot and demonstration projects of the proposed measures in the Climate change and IWRM strategy and action plan are executed.

As described above different pilots were implemented and finished within the timeframe. The pilots were planned for and implemented under the coordination of Local Government, in collaboration with PROTOS and DWRM. A full and final evaluation of the pilots is at this stage not available but has

been planned for by PROTOS by end 2013. Due to the nature of the pilots and the timeframe of this program no impact assessment and long term effects or duplication capacity could be identified. The intermediate results as such are shared within the IWRM thematic team and the UWASNET working group on IWRM and Climate change. Further sharing of the experiences will be possible when the video documentary will get final approval.

Outcome 3: Platform for sharing information and raising awareness on available adaptive mechanisms to Climate Change is established and operational

All data is available on PROTOS website.

c. Objectives

The overall objective of the project is to contribute to

enhancing the adaptive capacity to climate change of the population in the Mpanga Catchment.

The program has contributed to the enhancement of the adaptability of communities. This was done by involving them in planning processes to improve the management of the water resources within the catchment and at the same time sensitizing them on climate change related issues.

Many people within the catchments were directly or indirectly involved in the pilots that were rolled out. (some received seedlings and could help to restore river banks, some received alternative crops and can harvest more independent from rain patters, in some areas soil conservation methods were introduced, some people living in urban areas have been included in pilots to start up improved waste management

The total amount of people benefitting and the long term effect is at this stage difficult to estimate.

5.0 Project results: Context analysis

Uganda has ratified regional and international policies on climate change, including the United Nations Framework Convention on Climate Change (UNFCCC), and also contributed to the Cancun Agreement on adaptation. Uganda has also initiated the process of developing a National policy on climate change.

Government has developed a National Development Plan that is a successor program to the Poverty Eradication Action Plan. This plan provides for adaptation measures focusing on solutions that require technological capital and investments.

According to the NAPA (2007) improved management of water resources, is ranked among the top 3 priorities, together with improved land management (and use) and agriculture/ forestry.

In order to respond to the challenges highlighted in the NAPA with respect to climate change impacts on water resources, DWRM undertook a climate change vulnerability assessment in 2009 that lead to preparation of a Climate Change Adaptation strategy for water resources that was finalised in 2010. Effective implementation of the strategy was seen to be best done following IWRM principles and on a basin or catchment level. To help operationalize the Climate Change Adaptation strategy, DWRM has developed a Catchment based water resources management framework.

This program has been rolled out based on actions taken in the past in the roll out and piloting of Catchment Based IWRM in the Mpanga basin. At this time emphasis on the linkages to CCA was given. This allowed building practical experience of the linkage between CCA and CB IWRM.

At the same time a lot of emphasis was given to involvement of local communities by large scale sensitization and discussion sessions which allowed to include IK into the bottom up planning process. Capturing IPK is recognized as a primary intervention area in the NAPA.

When it comes to the practical impacts of the CB IWRM policies and its targets, local government have been identified to implement and coordinate measures that were planned for at a catchment level. This pilot has adopted those principles and has left the coordination of CMP process to the CMO and the steering of pilots to the districts or the municipality. Therefore it was a relevant experience to evaluate the efficiency of this approach.

At the same time the de-concentrated offices (Albert Water Management Zone offices in Fort Portal) of the DWRM were fully integrated within the process allowing them to build up experience, will they play a role in the monitoring of the results on long term?

One of the guiding principles of the program roll

out was the buildup of human resource capacities which has related not only to partners organizations but also to Local Government and DWRM office for the Albert Water Management Zone. The experience

gathered, in combination with the ambition on a countrywide mainstreaming of the CB IWRM policies will allow a lever for increased impact on the piloted approaches and methods.

6.0 Technical assistance

The program and its outline were proposed by PROTOS in partnership with the DWRM. Based on feedback of UNEP offices in Nairobi the proposal was fine-tuned and finalized.

During the course of the project the assigned project officers at UNEP Nairobi were briefed on the progress and intermediate reports were submitted. When the pilots were being implemented a field visit was organized by one representative for a period of one week (September). During that period site visits were organized, partners were visited and internal discussions on project progress were held.

Further on during the implementation period, it was evident that in-depth community planning and also monitoring of impact within one year period is

rather complex and also quite difficult.

At the same time UNEP assisted in the methods to document ongoing activities. This relates to formats on progress reports and proposal to document activities by a short film.

The experience on ground and the partnership between PROTOS and the DWRM, that has proven to be successful in the past, has benefitted from the extra support that was provided by UNEP. Piloting CCA activities within the broader framework of IWRM and creating field experience on how the implementation framework can be used in order to achieve prioritized CCA interventions has been felt as an important input for IWRM policies.



7.0 Recommendations

Based on the experiences gained from the program it has shown that the use of IWRM planning methods for CCA initiatives is suitable; and that using the proper tools and approaches allow local communities to be involved.

At the same time the pilot showed that the capacity on ground is in many cases not well developed which has to some extent impacted the program and the possibility to achieve initial timeframes. As such the startup was slower than foreseen and it took a lot of additional support to reach the intermediate targets. Therefore the use of a proper capacity assessment tool of partners would allow better program preparations and identification on the need for capacity support.

Further during the program it was shown that – when bottom up planning processes are included in the time frame of one year is quite difficult to implement field activities and even monitor their

impact. In the formulation of new programs this aspect should be considered.

The project was mainly implemented through the districts and municipality where the personal engagement of the ones involved was in many cases decisive on the success of the interventions. Proper strategies need to be developed to better co-steer the implementation of certain pilots. These experiences have potential to create significant added value for the CB IWRM policies.

As the pilot has been finished, PROTOS the DWRM and UNEP need to agree on how materials can be developed that will allow fully capturing the gained experiences and ensuring they will be benefitting the policies on CB IWRM.

For now all project reports are available and a video documentary has been made. Partners need to agree on the strategies to be used for spreading the relevant outcomes.

8.0 Way forward

Efforts to build capacities, sensitize and involve communities and perform integrated water resource planning in the catchment will be ongoing under the current partnership between PROTOS and DWRM. This opportunity will be used to further monitor the outcomes of the pilot.

For the development of new activities in the future focus should be on:

- Documentation of experiences and visibility of the pilot

- Ensure experiences can create useful feedback into the roll out of CB IWRM policies through existing platforms as the IWRM thematic team, The NGO working group on IWRM and CC
- Further piloting of proposed action included in the Mpanga CMP.





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