

# SUSTAINABLE CATCHMENT MANAGEMENT INTERVENTIONS IN THE UVIRA TERRITORY, SOUTH KIVU PROVINCE, DRC

## LESSONS LEARNT

UNDP-Supported, GEF-Financed Project on Partnership Interventions for Implementation of the Strategic Action Programme for Lake Tanganyika, Democratic Republic of Congo Component





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**SASKIA A.E. MARIJNISSEN**

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## ABBREVIATIONS AND ACRONYMS

ACODI	Action Communautaire pour le Développement Intégré Community Action for Integrated Development
ADECOP	Action pour le Développement des Communautés Paysannes Action for the Development of Rural Communities
ADRA	Adventist Development and Relief Agency
AEAKI	Association des Eleveurs et Agriculteurs de Kirungu Association of Pastoralists and Farmers of Kirungu
AfDB	African Development Bank
APR/PIR	Annual Project Review / Project Implementation Report
Asl	Above sea level
Cap-Net	International network for capacity development in sustainable water resources management, supported by UNDP.
CBFM	Community-Based Forest Management
CBO	Community-Based Organisation
CDC	Committee de Développement Communauté de Kigongo Committee for the Development of the Community of Kigongo
CIV GRN	Inter Village Committee for the Management of Natural Resources Committee Inter-Villageois pour la Gestion des Ressources Naturelles
CMC	Catchment Management Committee
CoM	Conference of Ministers
COOJAEKA	Cooperative de Jeunes Agro-eleveurs de Kashekebwe Cooperative of Young Agro-Pastoralists of Kashekebwe
DRC	Democratic Republic of Congo
ED	Executive Director
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit German Society for International Cooperation
ESARPO	Eastern and Southern Africa Region Program Office
ICCN	Congolese National Institute for the Conservation of Nature Institute Congolais pour le Conservation de la Nature
ICRAF	World Agroforestry Centre
ISAD	Institut Supérieur de Développement des Sciences Higher Institute for Scientific Development
ISDR	Institut Supérieur de Développement Rural Higher Institute for Rural Development
IUCN	International Union for the Conservation of Nature
IWRM	Integrated Water Resource Management
LTA	Lake Tanganyika Authority
LTBP	Project on Pollution Control and Other Measures to Protect Biodiversity in Lake Tanganyika (aka “Lake Tanganyika Biodiversity Project”)
LTRIEMP	Lake Tanganyika Regional Integrated Environmental Monitoring Programme
LTRIMDP	Lake Tanganyika Regional Integrated Management and Development Programme
MC	Management Committee
MTE	Mid-Term Evaluation
NAP	National Action Plan
NCU	National Coordination Unit (PRODAP)
NGO	Non-Governmental Organisation
NRM	Natural Resource Management
NSC	National Steering Committee
OSBEDEC	Organisation Saint Basil pour le Développement de l’Ouest de Congo Saint Basil Organization for the Development of Eastern DRC
PCU	Project Coordination Unit

PMU	Project Management Unit
PRODAP	Projet d'Appui au Programme Régional d'Aménagement Intégré du Lac Tanganyika Project to Support the Lake Tanganyika Integrated Regional Development Programme
RTNC	Radio Television National Congolaise National Congolese Radio and Television
SAFAU	Synergy des Associations pour la Promotion des Foyers Ameliore a Uvira Consortium of Associations for the Promotion of Improved Stoves in Uvira
SAP	Strategic Action Programme
SYMUF	Synergy de Media de Uvira et de Fizi Media Consortium from Uvira and Fizi
TDA	Transboundary Diagnostic Analysis
ToR	Terms of Reference
ToT	Training of Trainers
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services
WWF	World Wide Fund for Nature



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## **SUMMARY**

Lake Tanganyika is a global hotspot of aquatic species diversity, harbouring hundreds of species that occur nowhere else in the world. The lake's extensive catchment basin includes numerous rivers and wetlands, as well as national parks and nature reserves that are of worldwide significance for the protection of wildlife.

The catchment basin of Lake Tanganyika is shared by the Republic of Burundi, Democratic Republic of Congo, the Republic of Rwanda, the United Republic of Tanzania, and the Republic of Zambia. The human population growth rates in this region are among the highest in the world. Development indices are low, poverty is rampant, and as a result, environmental degradation is proceeding at alarming rates. The Lake Tanganyika basin is becoming increasingly vulnerable to the effects of human activities, including deforestation, unsustainable agricultural practices, and the impacts of global climate change.

Between November 2010 and March 2013 a series of activities took place in the Uvira Territory, South Kivu Province, Democratic Republic of Congo aimed at promoting sustainable catchment management practices and improving local livelihoods, in the framework of the UNDP-supported, GEF-financed regional Project on Partnership Interventions for the Implementation of the Strategic Action Programme for Lake Tanganyika.

The activities were implemented by WWF under regional coordination by UNOPS, with technical support from ICRAF, under the guidance of the DRC National Steering Committee consisting of members of the Government, LTA and local stakeholders.

This report documents lessons learnt about the factors that enable good practices and successes, as well as lessons learnt from challenges experienced while implementing the project. The purpose of this report is to inform improved design, planning and implementation of future catchment management interventions beyond the project level.

Information was obtained through analysis of relevant documents and targeted interviews, as well as through a National Workshop that was attended by stakeholders and project partners.

## **Good Practices and Enabling Factors for Success**

Given the relatively short duration of project implementation, the successes achieved are remarkable. Although the protracted conflict situation, the magnitude of socio-economic, environmental and political challenges in the region places constraints on large-scale replication, activities promoted by the project offer opportunities for long-term improvement of local livelihoods.

One of the factors that contributed to the achievements of the project was the choice to work with an institution that has extensive experience in the region, and whose long-term interests and overall objectives are aligned with those of the project. Experiences and lessons learnt from other projects implemented by WWF in the region were integrated into the design and approach of the activities for the DRC Component in the Uvira Territory. Another important factor that contributed to the success of the project was the positive collaboration between WWF and ICRAF, which allowed complementation and strengthening of each others inputs, combining scientific and analytic capacity with experiences and knowledge of the local context.

The project implemented a range of good practices and demonstrations of sustainable catchment management activities in the field. Key lessons were learnt about the enabling factors that contributed to the achievement of successes.

**Lesson 1: A genuinely participatory method of project implementation, which takes a bottom-up approach by not only engaging primary stakeholders in execution of interventions but also in decision-making processes facilitates high levels of local ownership, involvement and support among local communities.**

A key lesson learnt from other projects that was integrated in the execution of the DRC Component, was the importance of understanding the local community context and involving stakeholders at the appropriate level. As a result, the project was implemented according to a bottom-up approach that actively engaged primary stakeholders not only in awareness raising activities and implementation of project activities, but also in decision-making processes. Customary chiefs and community leaders subsequently became champions for the good practices promoted by the project. This resulted in high levels of local ownership, involvement and support.

**Lesson 2: By taking an innovative approach that combines local knowledge with sophisticated scientific analytical methods and information, and by promoting a diversity of tree species for agroforestry, adapted to the specific needs of each farmer, situation, and specific location, increased opportunities are generated for ecologically sustainable livelihood diversification.**

One of the greatest successes of the project was its innovative method of combining local knowledge and sophisticated scientific analyses to improve catchment management practices and support local livelihoods. As a result of the project interventions, local agroforestry practices shifted from monocultures with mostly non-indigenous tree species, to using a diversity of trees, including indigenous species that had started to disappear from the landscape as a result of deforestation. By promoting a diversity of trees, each with different utilities, environmental sustainability can be increased, and livelihood options are diversified.

**Lesson 3: A combination of targeted training, experiential learning, and establishment of collaborative synergies can help overcome challenges of extreme poverty and limited capacity for implementation of sustainable catchment management practices.**

The interventions of the project took place in an area characterised by high poverty rates and limited capacity for sustainable catchment management practices at the community level. By promoting collaboration and establishing synergies of local associations, the project succeeded in encouraging and empowering stakeholders through mutual capacity strengthening.

Targeted training workshops were organised, and experiential learning was facilitated by inviting stakeholders to participate in implementing sustainable catchment management activities in the field. In total, almost 2 million seedlings were produced by the nurseries. Over 800 hectares (target: 600 ha) was planted with appropriate tree species, and an additional 167 ha (target: 120 ha) of forest was rehabilitated. The success of the participatory demonstration activities resulted in an increased number of farmers interested in replicating the contour terracing practice on their own plots.

**Lesson 4: Gender-sensitive, participatory selection and promotion of energy-efficient technologies offers lucrative opportunities for equitable, ecologically sustainable livelihood diversification.**

The promotion of improved energy-efficient cooking stoves was another key success of the project. A synergy was established between CBOs and NGOs who worked together in the design, production, and effective marketing of the improved stoves. The majority of the synergy is made up of women, who played an active role in marketing and in advocating the importance of using improved cooking stoves. Over a period of less than six months, a total of 1,300 stoves was sold at a promotional price of USD 5 each (total

USD 6,500). The production of the stoves thus contributes to a reduction in deforestation as well as to improvement of livelihoods.

**Lesson 5: Formulation of environmental outreach strategies according to local needs, taking into account issues of illiteracy, gender and languages contributes to successful awareness raising of targeted stakeholders.**

Increased awareness about environmental problems as well as knowledge of possible solutions among a wide group of targeted stakeholders was achieved by modelling outreach and awareness raising activities according to local needs, using a diversity of communication methods (song, theatre, festive events, radio broadcasts, printed media and Facebook postings) in the relevant language (local languages, Kiswahili, French, English).

## **Challenges and Solutions for Sustainability**

The project was implemented under difficult circumstances, with limited time available and in the context of a protracted conflict. Key lessons were learnt from the challenges encountered in ensuring future sustainability, mainly related to security risks, capacity gaps, poverty, and gender inequity issues.

**Lesson 6: Limited rule of law in protracted conflict context leads to security risks and high crime rates, which can hamper project activities. By minimizing and managing security risks in collaboration with local communities, significant environmental impacts and livelihood improvements can be achieved in areas that are excluded from most development interventions.**

Areas in the higher catchment that are excluded by most development organisations that are active in the Kivu region due to inaccessibility and security issues were included by the project, based on the fact that they were identified as hotspots for land degradation and erosion. Risks were minimized by maintaining communication networks to monitor security threats, and by having contingency plans in place. Working closely with stakeholders in these high risk areas increased environmental impact as well as levels of buy-in and support.

**Lesson 7: Enhancing capacity of Government institutions requires a focused approach to review and reform of policy and legal frameworks, establish sustainable financing systems, improve organisational frameworks, promote extension services, and promote adequate management instruments.**

A significant challenge in post-conflict contexts with fragile institutions, weak civil societies and divided populations is how to ensure effective ownership and facilitate continuation of best practices in the future. The project was successful in ensuring engagement and ownership at the community and customary leadership level, however, achieving a similar results with Government institutions proved difficult.

The magnitude of the capacity challenges and the absence of a sufficiently enabling environment with respect to legislative frameworks, enforcement opportunities, financing and incentive structures requires a focused approach, and significant investment of human and financial resources. Experiences from the project as well as lessons learnt from UNDP's Cap-Net should be integrated to develop interventions that can enhance the capacity of Government institutions for sustainable catchment management.

**Lesson 8: The overwhelming magnitude of environmental degradation and extreme poverty limits possibilities of local stakeholders to invest in scaling-up and long-term continuation of good practices in sustainable catchment management. Therefore, solutions need to be sought in a larger-scale approach, combining the strength of multiple organisations with substantial capacity to influence change and long-term development commitments in the region. Opportunities for securing donor support exist in the fact that sustainable resource management interventions offer multiple possibilities to help rebuild societies. Biodiversity conservation arguments are found in the fact that the region borders the largest block of intact montane forests in Africa, which include important habitats for endangered wildlife.**

Many of the challenges experienced by the project related to extreme poverty, weak economic development opportunities, and the limited possibilities of local stakeholders to invest in scaling-up and long-term continuation of good practices in sustainable catchment management. Continued support and a larger-scale approach combining the strengths of multiple organisations is required to increase impacts and improve chances of sustainability.

A joint-strategy could be designed that recognizes the complexity of the post-conflict context, ensures that the political, social, gender, institutional, and financial context is well-analysed, and integrates good practices and lessons learnt from this project. Lessons learnt from other post-conflict situations indicate that sustainable natural resource management interventions can provide multiple opportunities to help rebuild societies. Combining this with the lessons learnt from the present project provides convincing arguments for securing future donor support:

- Agroforestry interventions using appropriate species and sustainable agriculture investments can mitigate mismanagement and overexploitation of natural resources.
- Providing ecologically sustainable economic opportunities offers an alternative to continued conflict and can jump-start local economies.
- Improvements in economic and social conditions promote stability and thereby avoid further destruction of productive assets.

Other arguments for securing donor support can be found in the fact that the Uvira Territory borders the largest, most remote block of intact montane forests in Africa, which is an important area for biodiversity protection, and a key habitat for wildlife including chimpanzees and endangered gorilla's. By promoting sustainable agriculture and agroforestry practices, and by reducing the need for firewood and charcoal of the adjacent communities in the Uvira Territory, land degradation pressure on the buffer zone around the Ithombwe forests can be reduced.

**Lesson 9: Environmental aspects including the time required for trees to grow, the potential effects of exotic trees on biodiversity, and the effects of climate change on reducing rainy seasons need to be taken into account for future interventions, as these can have a significant impact on reducing sustainability.**

The time required for trees to provide services influences the likelihood of larger-scale replication, and thus sustainability. It is important for future projects to take these aspects into account during design, planning, and implementation, in order to ensure that sufficient time is available to obtain visible results.

The project promoted several agroforestry trees that are known to cause a risk as potential invasive species (e.g. *Cassia siamea*, *Leucaena diversifolia*). Maintaining a level of caution about the potential effects of agroforestry species on biodiversity, and raising awareness of stakeholders about these risks is crucial for future environmental sustainability.

The activities of the project implicitly contribute to mitigation and adaptation to the effects of climate change, by offering livelihood alternatives, increasing tree cover, implementing measures against extreme weather events such as floods (erosion control), and increasing resilience by promoting a diversity of tree species. However, opportunities were missed because expected climate change impacts on agriculture

and agroforestry were not explicitly addressed. Climate change issues need to be addressed in project design and implementation, so that mitigation and adaptation measures such as agroforestry species that have a wider tolerance for changes in temperature or precipitation can be promoted.

**Lesson 10: Underlying institutional and legislative challenges related to landownership and forest protection need to be addressed in to ensure sustainability of project interventions aimed at catchment management and forest conservation, and in order for local communities to benefit in the longer term.**

Landownership issues greatly affect sustainability. Customary, informal and statutory land-tenure systems in DRC are complex, and parcels of land can be claimed by multiple individuals simultaneously. Many farmers in the South Kivu region, especially in the lower catchment areas, are tenants instead of owners. This places constraints on the level to which they are willing or able to invest in resource-intensive environmentally sustainable solutions. To increase sustainability, the complexity of land-tenure systems needs to be analysed prior to project interventions, and the capacity of relevant Government institutions dealing with landownership issues needs to be enhanced.

While community-based forest management is a good practice in sustainable catchment management, which was supported by the project, there are several challenges associated with the enforcement of relevant laws by Government institutions. In order to cut trees in a community-protected area, tax needs to be paid to the local Administration. This structure imposes the risk that anyone who pays the required fee can cut trees in protected areas, without profits flowing back to the community itself. Because the long-term benefits will be limited if the community does not have sufficient ability to control the forest resources itself, this is an aspect that needs to be addressed.

**Lesson 11: Since women are primary users of natural resources and have great potential as stewards for sustainability, future catchment management interventions should ensure that gender equity is taken into account.**

The project identified women as a key stakeholder group for communication and environmental education, and they were actively engaged as champions for outreach activities. Nonetheless, opportunities were missed for the project to address gender issues by offering equal opportunities for participation in training workshops. Since women form 51% of the economically active population in DRC, they are the primary users of many natural resources and are charged with 80% of the food security and 90% of the water security in rural communities, it is highly relevant that gender aspects are integrated in future sustainable catchment management interventions.

**Lesson 12: In order for M&E frameworks to be useful for informing adaptive management, there needs to be an adequate balance between quantitative and qualitative data, the process of collecting and analysing data needs to be understood by everyone involved, and functional feedback loops are required between stakeholders in the field and project partners.**

The M&E process adopted by the PMU was based on a regional framework with limited relevance for informing adaptive management at the national level of the DRC Component. Quantitative data that was integrated in the M&E framework focused on issues such as number of seedlings produced and hectares planted, which does not offer information about the different agroforestry species used and their various qualities for erosion control and livelihood diversification. Improved feedback loops between PMU's, and relevant project partners could help to increase the value of M&E processes.



# 1 BACKGROUND

Lake Tanganyika is one of the African Great Rift valley's natural gems. The lake is famed as a global hotspot of aquatic species diversity, harbouring hundreds of species of colourful cichlid fish, an endemic freshwater cobra, as well as species of snails, ostracods<sup>1</sup>, crabs, shrimps, leeches, and sponges that occur nowhere else in the world. The lake's extensive catchment basin includes numerous rivers and fertile wetlands, as well as magnificent national parks and nature reserves that are of worldwide significance for the protection of wildlife. The basin also includes montane forest areas that among the few remaining habitats for the world's great apes (chimpanzee and gorilla's).

The catchment basin of Lake Tanganyika is shared by the Republic of Burundi, Democratic Republic of Congo, the Republic of Rwanda, the United Republic of Tanzania, and the Republic of Zambia. The human population growth rates in this region are among the highest in the world. Development indices are low, poverty is rampant, and as a result, environmental degradation is proceeding at alarming rates.

Although a recent study categorized Lake Tanganyika as relatively healthy compared to the world's other Great Lakes (Dobiez et al. 2009), aquatic as well as terrestrial ecosystems in the basin are increasingly at risk. Evidence collected over the past two decades demonstrates that the basin is becoming progressively vulnerable to the effects of human activities, including deforestation, unsustainable agricultural practices, unsustainable fisheries, pollution, and the impacts of global climate change (Darwall et al. 2011; LTA 2012 and references therein).

## 1.1 UNDP-GEF PROJECT ON LAKE TANGANYIKA

In recognition of the importance of Lake Tanganyika's unique species diversity and its natural resources at a local, regional and global scale, the Global Environmental Facility (GEF) and United Nations Development Programme (UNDP) provided funding and support for two key initiatives aimed at protecting biodiversity and facilitating sustainable NRM:

- The regional Project on Pollution Control and Other Measures to Protect Biodiversity in Lake Tanganyika, LTBP<sup>2</sup> (1995-2000)
- The regional Project on Partnership Interventions for the Implementation of the Strategic Action Programme for Lake Tanganyika<sup>3</sup> (November 2009<sup>4</sup> - March 2013)

One of the key outputs of the LTBP was the Convention on Sustainable Management of Lake Tanganyika, which was ratified by the four<sup>5</sup> riparian countries in 2007. The Convention provides for the establishment of the Lake Tanganyika Authority (LTA), an intergovernmental body that is intended to coordinate activities relevant to the protection of biodiversity and sustainable management of the natural resources in the catchment basin.

The LTBP also implemented a Transboundary Diagnostic Analysis (TDA) of the socio-economic and environmental status in the lake. The TDA formed the scientific and factual basis of the formulation of a regional Strategic Action Programme (SAP), which provides the framework for transboundary and national

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<sup>1</sup> Ostracods are minute crustaceans, also known as 'seed shrimps'.

<sup>2</sup> [www.ltbp.org](http://www.ltbp.org)

<sup>3</sup> [jwlearn.lta.org](http://jwlearn.lta.org)

<sup>4</sup> The regional project was approved by the GEF in April 2008, and funds were channeled for the five Components in November 2009. However, the PCU was not staffed until April 2009, and the PMU of the DRC Component was not staffed until November 2010.

<sup>5</sup> Burundi, Democratic Republic Congo, Tanzania and Zambia. Note that although Rwanda is riparian to Lake Kivu, which forms part of the Lake Tanganyika catchment, it is not a signatory to the Lake Tanganyika Convention.

interventions to counteract the detrimental impacts of rapid population growth and unsustainable natural resource exploitation.

The second UNDP-supported, GEF-funded project on Lake Tanganyika focused on strategic interventions in each of the four countries that are in agreement with the Convention and support the LTA. Besides these four National Components, the project also included a Regional Component, comprising capacity building for the LTA, environmental monitoring, updating of the SAP, and overall regional project coordination.

The interventions were intended to be implemented in close harmonisation with those of the African Development Bank-funded Project to Support the Lake Tanganyika Integrated Regional Development Programme (PRODAP<sup>6</sup>).

Both projects fall under the overall Lake Tanganyika Regional Integrated Management and Development Programme (LTRIMDP) that is coordinated by the LTA.

The overall development objective of the UNDP-supported, GEF-funded project is as follows:

*“The improvement of the living conditions of the riparian populations through the implementation of the Strategic Action Programme, the Fisheries Framework Management Plan, and the Convention, together with ongoing and future efforts of the riparian countries, so as to bring about integrated sustainable management and protection of Lake Tanganyika.”*

## 1.2 DRC COMPONENT

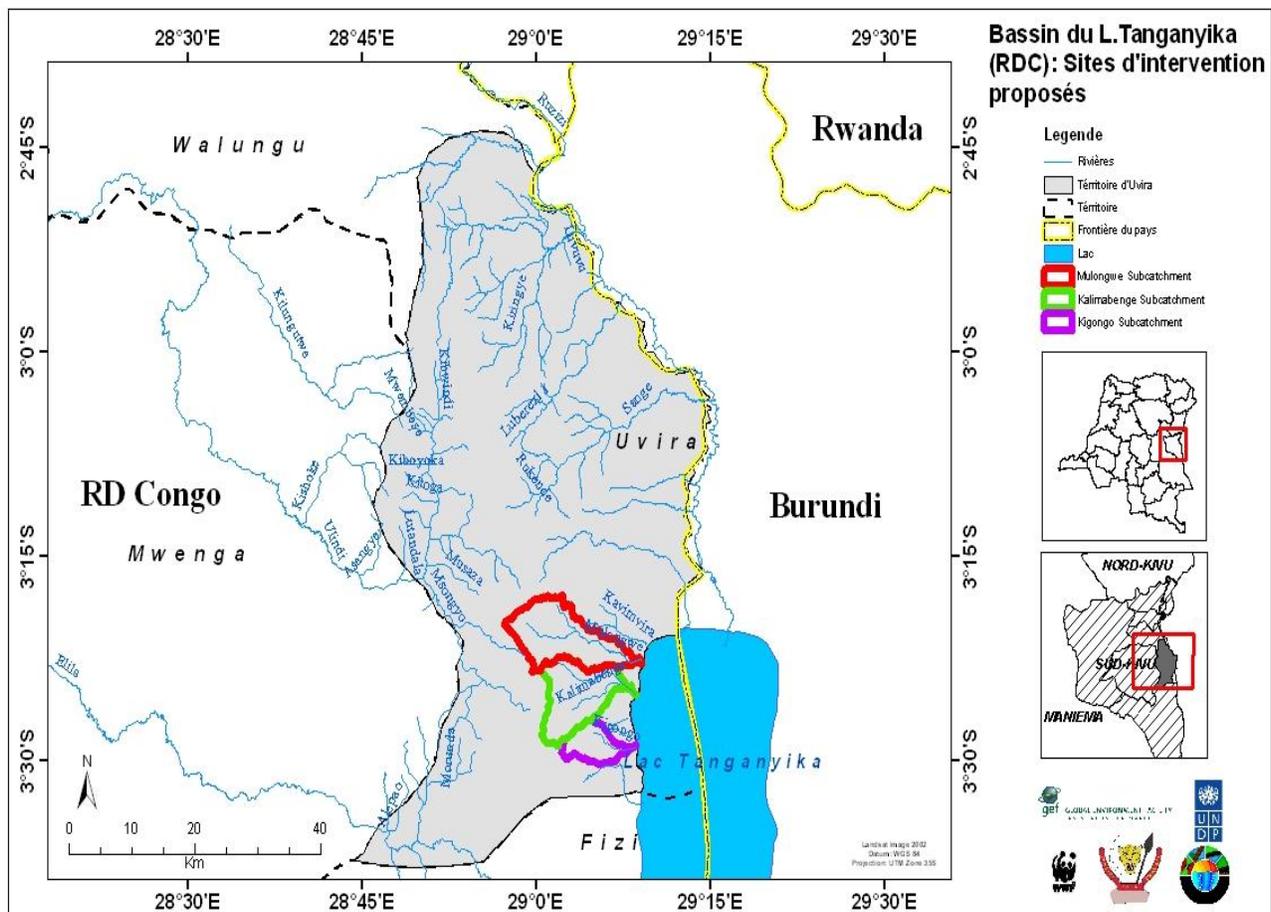
As part of the UNDP-supported, GEF-funded Project on Partnership Interventions for the Implementation of the Strategic Action Programme for Lake Tanganyika, WWF was sub-contracted by the United Nations Office for Project Services (UNOPS) in June 2010<sup>7</sup> to implement catchment management activities in the Uvira



**Figure 1.** Map of the Lake Tanganyika catchment basin and its riparian countries. © ILEC, 2006

<sup>6</sup> PRODAP is the acronym used based on the French title for the project (Projet d'Appui au Programme Régional d'Aménagement Intégré du Lac Tanganyika).

<sup>7</sup> Recruitment of staff took place between June-October, and the Inception Workshop took place in November 2010. The project will close its activities on 31<sup>st</sup> March 2013.



**Figure 2:** Location of the Kigongo River, Kalimabenge River and Mulongwe River sub-catchments in the northern Lake Tanganyika catchment basin, which were selected as priority project intervention sites.

Territory, South Kivu District on behalf of the DRC Government<sup>8</sup>.

The Uvira Territory is characterised by steep mountainous landscapes and the extensive delta of the Rusizi River, which is the second largest inflowing river in Lake Tanganyika. Several smaller rivers flow through the Uvira Territory, including the Kigongo, Kalimabenge and Mulongwe River (Figure 2). The Itombwe Massif above Uvira includes mountains of over 3,000 m asl, and includes the largest and most remote block of intact montane forest in Africa. The Itombwe Landscape was identified as a significant area for the conservation of biodiversity, including eastern chimpanzees and the endangered Grauer's gorilla (Plumptre et al. 2009).

The eastern slopes of the Itombwe Massif in the Uvira Territory are characterised by high levels of deforestation and erosion. The extreme erosion in combination with regular earthquakes frequently leads to dangerous landslides, that often result in destruction of houses and loss of lives. In addition, the high erosion rates on the steep mountain slopes results in rapid loss of soil and low agricultural productivity.

The DRC Component is one of the most challenging component of the overall UNDP-supported, GEF-funded project on Lake Tanganyika due to the fact that it is implemented in a context of a protracted conflict. The eastern DRC has been plagued recurring episodes of extreme violence and severe

<sup>8</sup> The DRC Component of the UNDP-GEF Project on Lake Tanganyika is managed by the United Nations Office for Project Services (UNOPS) through its Regional Project Coordination Unit (PCU) in Bujumbura, Burundi, with administrative support from the UNOPS Europe and Middle East Office (EMO) in Copenhagen, Denmark.

humanitarian consequences. Inhabitants of the South Kivu District are attempting to recover from the various wars that took place in the region the past decades. However, population instability, lack of good governance, limited institutional capacity, repeated conflicts over natural resources and continued presence of armed groups, as well as inadequate rule of law, limit opportunities for recovery and development.

The effects of these contextual factors are of great influence on sustainability, and therefore one of the greatest challenges is appreciating and managing the political, social and financial reality in which project activities are being implemented. Conflicts are an important cause of extreme poverty, as they undermine livelihoods, prevent normal trade patterns and weaken economies (World Bank 2004). In the South Kivu Province, this has resulted in low food production and high incidences of food insecurity (Rossi et al 2006).

Farmers in the Kivu region have reported that they no longer go to their fields for fear of being killed or raped (Oxfam 2012). People's lack of access to their fields because of insecurity severely hampers their ability to earn a living. Poverty levels in the Kivu region are among the highest in the DRC, which has an average of 67.6% of people living on less than USD 0.20 per day (Ansoms and Marivoet 2010)

With the emergence of the M23 rebel group in April 2012, a new dimension was added to the insecurity in the Kivu region, further corroding people's ability to lift themselves out of poverty (Oxfam 2012). As recent as November 2012, threats of M23 to overtake the city of Bukavu after having taken Goma resulted in tension and internal displacements of populations in the Uvira Territory. Internally displaced people place an extra burden on the already poor farmers that end up hosting them.

The DRC component aims to offer tailored solutions for the recovery of the environment while simultaneously improving local livelihoods by focusing on the following nine Outputs:

- Output 1** Government and community natural resource institutions reviewed and strengthened for integrated catchment management
- Output 2** The hydrology of priority high sediment load rivers investigated and river sediment reduction management plans developed
- Output 3** Appropriate agroforestry practices and soil management needs assessed with stakeholders in priority areas and populations
- Output 4** The capacity of government and communities to establish and successfully manage tree nurseries sustainably producing appropriate forestry and agroforestry species strengthened
- Output 5** Old managed forest areas rehabilitated and new community and private woodlots established and sustainably managed regenerating appropriate forest cover
- Output 6** Appropriate energy-saving technologies assessed with stakeholders, piloted and widely adopted by targeted resource user groups
- Output 7** Awareness of communities raised about soil erosion, deforestation and agroforestry management issues in relation to local livelihoods and the conservation of Lake Tanganyika
- Output 8** Project lessons and developments disseminated for replication in priority areas
- Output 9** Project efficiently and effectively managed, monitored and evaluated

The Outputs of the DRC Component of the project and its immediate objective to protect biodiversity and ensure sustainable use of natural resources in the Lake Tanganyika basin link closely to the overall

mission of WWF to stop the degradation of the planet's natural environment and build a future in which humans live in harmony with nature. Furthermore, its longstanding interest and experience in Central and Eastern Africa, its ongoing activities in the Kivu region and its established relationships with local institutions and stakeholders put WWF in an exceptionally good position to implement the DRC Component of the UNDP-GEF Project.

To offer backstopping for the catchment management activities of the DRC Component, a sub-contract was also established between UNOPS<sup>9</sup> and the World Agroforestry Centre (ICRAF). ICRAF has extensive technical capacity, and experience with similar environmental challenges in the region, specifically in the Lake Naivasha and Lake Victoria catchment basins. The main purpose of the sub-contract with ICRAF in the context of the DRC Component was to offer advisory inputs and scientific knowledge-based support for the development of best practice demonstration sites in the Uvira region.

In addition, a sub-contract was established between UNOPS and IUCN<sup>10</sup> to monitor and manage invasive alien species in Lake Tanganyika and its catchment basin. The activities implemented by IUCN are intended to create an overview of existing and potential biological invasions in the lake and its basin, as well as to establish mechanisms for the prevention and control of present and future invasions. This is especially important in the context of the Lake Tanganyika Convention, which requires the contracting States to prevent or manage negative impacts from alien species which may become invasive.

### 1.3 PROJECT INTERVENTIONS

WWF recognizes that effective catchment management strategies require holistic, integrated sector-wide approaches. Solutions for the adoption of sustainable NRM approaches need to be based on participatory approaches, and embrace all stakeholders in restoration of degraded environments.

Sustainable catchment management approaches require greater emphasis on improved agriculture, maintaining and increasing woody vegetation cover, and improving livelihoods through diversified incomes. The catchment management activities in the Uvira region were designed to take into account the intricate linkages between environmental challenges and the associated sustainable socio-economic development parameters.

In October 2010, a Project Management Unit (PMU) was established in Uvira, South Kivu District. The PMU comprised a Project Manager, Agroforestry Specialist, Forester, Community Outreach Officer, and an M&E Officer, as well as staff for financial administration and logistic support.

One of the first activities of the PMU was to implement a stakeholder analysis<sup>11</sup> to ensure adequate representation of relevant beneficiaries, participants and partners from the start of the project activities.

With support from ICRAF, project intervention sites were characterised based on analyses of trends in tree cover for the area. This ensured that demonstration site selection was placed within the local lake basin context, and that the design of catchment interventions was underpinned by rigorous landscape analyses<sup>12</sup>. After stakeholder consultation, three sub-catchments were prioritised for project interventions (Figure 2).

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<sup>9</sup> The contract with ICRAF is part of the Regional Component of the UNDP-GEF Project on Lake Tanganyika, and includes sustainable catchment management support in Burundi, DRC and Tanzania.

<sup>10</sup> The contract with IUCN is part of the Regional Component of the UNDP-GEF Project on Lake Tanganyika.

<sup>11</sup> See: Inception Report, UNDP-GEF Project on Partnership Interventions for the Implementation of the Strategic Action Programme on Lake Tanganyika – Democratic Republic of Congo Component on Sustainable Catchment Management Activities in Uvira Region, November 2010, page 11-12.

<sup>12</sup> See: ICRAF (2010) UNDP-GEF Project on Lake Tanganyika: DRC Site characterization and catchment management design workshop, Uvira, DRC, 6-10 December 2010. UNDP-GEF Project Regional Component Report. 33 pp.

ICRAF engaged in participatory analysis with local farmers, and combined sophisticated scientific analyses of catchment characteristics and tree species with local knowledge in order to select the best agroforestry species for each specific site, and the needs of the farmers. This resulted in the promotion of a diversity of tree species, including indigenous trees that had started to disappear from the landscape as a result of deforestation. ICRAF produced a toolbox for tree selection, that can be used and adapted by stakeholders. Training was provided on best practices in catchment management, including using a mixture of species to increase soil fertility, as well as creating contour barriers for erosion control. In addition, training was provided for local communities on participatory monitoring of sedimentation rates.

In total, 27 sites were identified in the three sub-catchments for demonstration of good practices in sustainable agriculture and agroforestry, working together with 25 farmers in each site. Tree nurseries were established in each site (Figure 3), and managed by existing CBO's. Based on the recommendations from the participatory analyses done with ICRAF, the nurseries produced a diversity of agroforestry species, including indigenous trees. In total, almost 2 million (1,855,355) seedlings were produced by the nurseries<sup>13</sup>. Over 800 ha (initial target: 600 ha) were planted by the project (see Annex III). In addition, the project rehabilitated 167 ha (target: 120 ha) of forests.

The activities implemented by IUCN on monitoring, management and control of biological invasions were mostly focused at the regional level, resulting from budget constraints and security issues. Awareness about the risks of invasive species for biodiversity and agriculture was raised through dissemination of reports and outreach materials, as well as through workshops that were attended by a range of stakeholders, including representatives of the DRC Government, CRH, LTA and the PMU.

Working in collaboration with five local associations<sup>14</sup>, which together formed a consortium (SAFAU), the project implemented a study and a series of experiments to create improved, energy-efficient cooking stoves. Training was provided to 30 people on the production of the stoves, and with support of the members of SAFAU a central workshop was set up for the production and marketing of the stoves. Thus far, SAFAU produced 2,700 improved stoves in the Uvira Territory. On the local market stoves of less quality are sold for around USD 7, but SAFAU sells its stoves for a promotional price of USD 5. They are sold directly by SAFAU at five locations, and by secondary salespersons at three more locations. The project developed a focused communication and outreach strategy to cover a wide group of stakeholders. Campaigns were organized to raise awareness about the effects of deforestation on biodiversity and local livelihoods as well as sustainable catchment management solutions. The project also organized a campaign to reduce the incidence of bushfires. A diversity of media was used, including radio, newspapers, and festive events. In addition, a manual was developed in collaboration with local schools in order to include sustainable catchment management in the education curriculum.

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<sup>13</sup> This was reported by the project as the total number of seedlings that survived in the nurseries. At the time of writing this report, no information was available on how many saplings survived after having been planted in the demonstration sites.

<sup>14</sup> The associations that are included in the SAFAU consortium are: Popoli Fratelli (see [popolifratelli.blogspot.com](http://popolifratelli.blogspot.com)), UWAMU (Umoja wa Wamama wa Uvira, Unity of Uvira Women), GRAIFA (Groupe d'Appui aux Initiatives Feminines d'Auto promotion), AEKI (Association des Eleveurs et Agriculteurs de Kirungu, Association of Livestock keepers and Farmers of Kirungu), and CDC/Kigongo (Comité de Développement Communautaire de Kigongo, Committee of Community Development of Kigongo).

## 2 ANALYSING LESSONS LEARNT

Throughout each project life cycle, lessons are learned about the factors that enable successes as well as opportunities for improvement. As part of a continuous improvement process, documenting lessons learned helps to discover causes of problems that occurred, and can help to avoid similar problems in future interventions. Similarly, documenting examples of successes can help enable others to identify best practices for duplication.

**The main objective of this report is to analyze and document good practices and lessons learnt to inform improved planning and implementation of future catchment management interventions beyond the project level.**

Catchment management experiences in the past have demonstrated that good practice cannot be represented as a rigid set of rules. Good practice is typically enabled by a framework that is comprised of aspects that may differ from catchment to catchment. These include external aspects that may impact the collaborative catchment management process over time, and the degree to which stakeholders might be able to reach their objectives and make use of good practice principles.

Factors such as lack of finances, lack of ability to retain adequate staff, poor stakeholder buy-in, inadequate data, or conflicting policy areas may influence catchment management processes. Principles such as transparent decision-making processes, as well as clearly defined and agreed roles and responsibilities are fundamental to achieving sustainable catchment management. Other principles such as good communication flow and conflict management are often important as well, but more context specific.

Different catchments have distinctive characteristics including geographic and spatial parameters, as well as drivers for change (environmental, socioeconomic, political). This means that each process needs to apply good practice as appropriate to its setting, and be evaluated with consideration given to this.

Although it goes beyond the scope of this report to analyze and describe all aspects mentioned above, efforts were made to offer as much as possible insight in enabling circumstances for successful catchment management (Chapter 3), as well as circumstances that may hamper sustainability of catchment management interventions (Chapter 4).

### 2.2 METHODOLOGY

To explore good practices and successes in sustainable catchment management interventions, and to identify lessons learnt, documents were analyzed and targeted interviews were held with a range of stakeholders.

Progress reports, technical consultancy reports, communication and outreach materials, as well as other documents that were included in the analyses are summarized in Annex I. A cross section of stakeholders was selected for interviews, based on their affiliation with the project. This includes representatives from: i) Government institutions; ii) customary authorities iii) Lake Tanganyika Authority; iv) UNDP-GEF Project Regional Coordination Unit; v); WWF Project Management Unit; vi) ICRAF; vii) NGO's and CBO's; and viii) farming communities (Annex II).

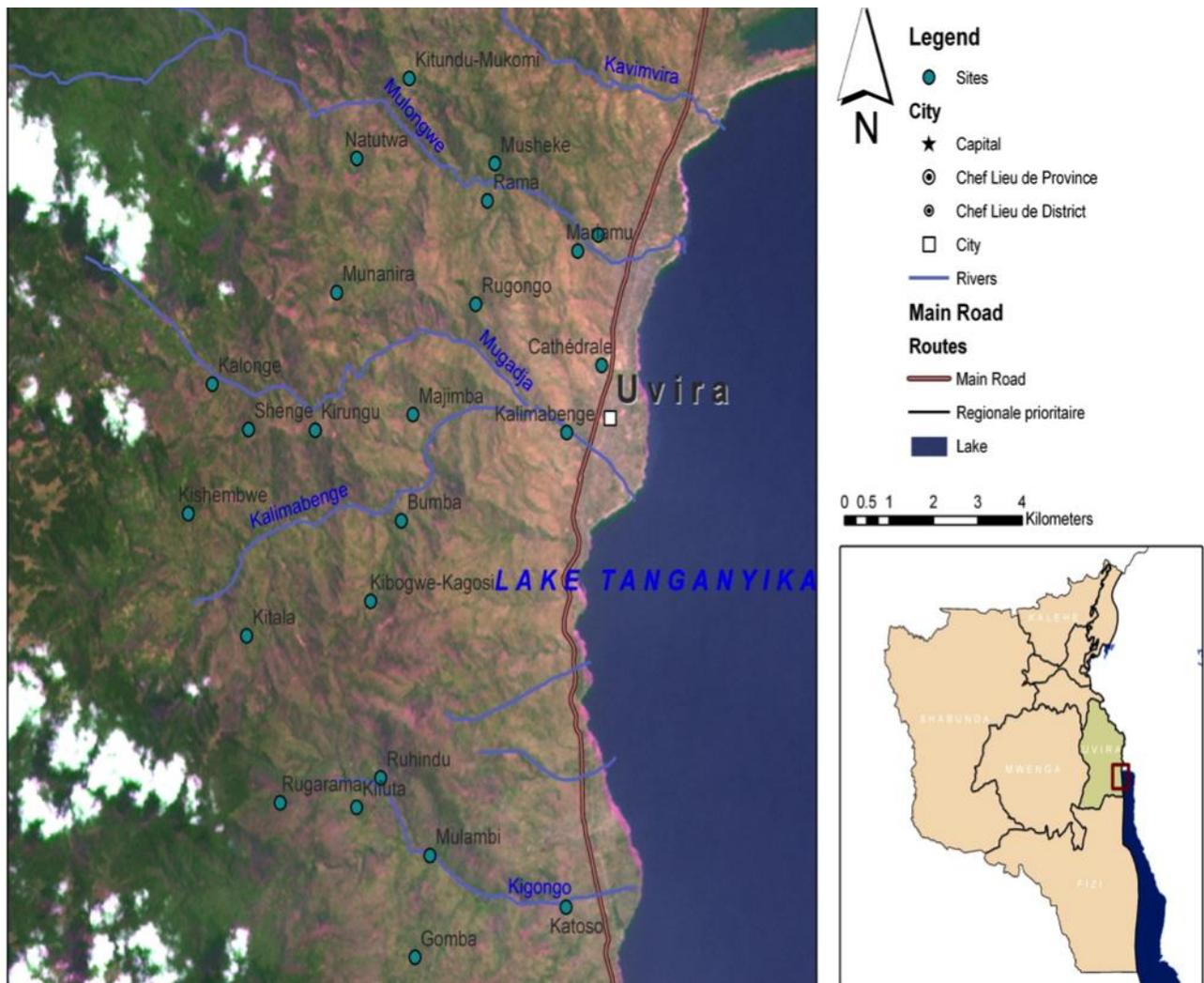
A conversational, semi-structured enquiry technique was used for the targeted stakeholder interviews. Summaries of the interviews are listed in Annex IV. The interviews were bilateral or in very small focus groups to encourage openness. A translator was used in cases where stakeholders did not speak sufficient French or English. In order to cross-check findings, care was taken to ensure that pertinent issues were discussed with several stakeholders. In addition, field visits were made to witness the impact

of on-the-ground project interventions, as well as to capture best practices and lessons-learned using photo and video.

The overall analyses of documents and stakeholder interviews focused on the following key questions:

- Which good practices and successes result from project implementation?
- What were the enabling factors that contributed to these good practices and successes?
- What were the factors that hampered progress or achievement of desired outcomes?
- Which important lessons can be learnt from the implementation of this project?
- How can successful project interventions best be replicated in the future?

In addition, a national workshop<sup>15</sup> was organised to discuss the outcomes of the analyses, and obtain additional insights on lessons learnt as well as recommendations for future sustainability (see Agenda, Annex V). The workshop brought together cross-section of people that were previously interviewed as well as additional stakeholders from CBOs, national and international NGOs, LTA and Government (Annex VI).



**Figure 3:** Location of demonstration sites with nurseries in the Kigongo (7 nurseries), Kalimabenge (13) and Mulongwe (7) sub-catchments. In total, 27 demonstration sites were established by the project. Three sites (Nakyoya, Kidjaga and Muheta) were not included on this map.

<sup>15</sup> The workshop was organized on 8<sup>th</sup> February 2013 in Uvira, DRC.



### 3 GOOD PRACTICES AND SUCCESSES

By adopting an adaptive management strategy, the project was able to achieve remarkable successes, given limited time and a magnitude of environmental, political, socio-economic and security challenges in the region (see Chapters 1 and 4.1).

The National and Regional components of the project were initially designed to be implemented over a period of 4 years. However, due to administrative hurdles the DRC Component started late, and as a result only 2 years and 4 months instead of 4 years effectively remained for its implementation<sup>16</sup>. The workplan of the DRC Component was adapted accordingly, to achieve the largest impacts possible in the remaining time without losing sight of the overall project objective and desired outcomes.

One of the factors that contributed to these successes was the choice to work with an institution that has extensive experience in the region, and whose long-term interests and overall objectives are aligned with those of the project. Lessons learnt from other projects implemented by WWF in the region were successfully integrated into the design and approach of the activities for the DRC Component, including a participatory approach, promotion of energy-efficient technologies<sup>17</sup> and establishment of nurseries<sup>18</sup>, as well as encouragement of good governance. In addition, the PMU in Uvira could count on logistic and technical support from WWF teams in Nairobi, Bukavu and Kinshasa.

Another contributing factor was the positive collaboration between WWF and ICRAF from the onset of the DRC Component. The collaboration of these institutions allowed complementation and strengthening of

#### **Box 1 KEY SUCCESSES**

- Genuinely participatory, bottom-up approach that clearly targeted and actively engaged primary stakeholders, resulting in high levels of local ownership, support and involvement.
- Prioritization of intervention sites based on scientific analysis and informed decision-making by key stakeholders.
- Inclusion of high altitude sites that were identified as hotspots of land degradation and erosion, but are excluded by most development interventions due to inaccessibility and security issues.
- Integration of local knowledge and sophisticated science to improve catchment management practices.
- Effective demonstration of good practices:
  - Community-based management of tree nurseries.
  - Promoting a diversity of agroforestry species, including indigenous trees that are better adapted to local circumstances.
  - Promoting erosion control measures, including contour terracing.
- Capacity enhanced through training and active involvement in demonstration practices.
- Improved energy-efficient technologies designed and produced by local CBO's.
- Successful communication and outreach efforts resulting in increased awareness of targeted stakeholders about environmental problems and knowledge of possible solutions.

<sup>16</sup> The DRC Component Inception Workshop took place 4 November 2010, and the project closed on 31 March 2013.

<sup>17</sup> WWF (2009) Virunga Environmental Programme – Energy saving department. WWF Report, 22 pp.

<sup>18</sup> WWF (2009) Présentation du projet EcoMakala. Viabilisation durable de l'approvisionnement en bois-énergie des populations rurales riveraines de la ville de Goma et du Parc National des Virunga (RDC). WWF Report, 21 pp.

each others inputs, with ICRAF providing substantial scientific and analytic capacity, and WWF providing knowledge of the local cultural, historical, socio-economic, security, and political settings, as well as experience based on previous activities in the region.

The sections below discuss good practices that were successfully implemented by the project, and the lessons learnt about the enabling factors that contributed to the achievement of these successes.

### 3.1 PARTICIPATORY APPROACH

By conducting a stakeholder analysis during the project inception phase, and by subsequently actively engaging primary stakeholders, high levels of local ownership and involvement were achieved among local communities (Box 2). A bottom-up approach was taken where primary stakeholders were not only engaged in implementation of project activities, but also in decision-making processes.

An important enabling factor that contributed to the success of this participatory approach was that substantial efforts were made to obtain insights in the local social and political context issues, and adapt the project accordingly. Demonstrating respect for traditional leadership and community structures, and actively engaging customary chiefs and community leaders as champions for good practices, contributed to the high levels of support from the primary stakeholders.

Furthermore, by being open to suggestions from stakeholders, the project team was able to identify and include new interventions such as community-based protection of naturally regenerating forests and actions to reduce bush fires, which were not part of the initial project proposal but did contribute to achieving the overall project goals.

**Lesson 1: A genuinely participatory method of project implementation, which takes a bottom-up approach by not only engaging primary stakeholders in execution of interventions but also in decision-making processes facilitates high levels of local ownership, involvement and support among local communities.**

Box 2 PARTICIPATORY APPROACH	
Good Practice	Enabling Factors
<ul style="list-style-type: none"> <li>Genuinely participatory approach that clearly targets and actively engages primary stakeholders, resulting in high levels of ownership, support and involvement.</li> </ul>	<ul style="list-style-type: none"> <li>Systematic stakeholder analysis during inception stage, prior to starting field activities.</li> <li>Substantial efforts to obtain an in-depth understanding of the local context issues. Implementation of focused study to understand relevant local situation and adapt the project activities accordingly.</li> <li>Respect for traditional leadership and community structures, which were taken into account in decisions about stakeholder-engagement during project implementation.</li> <li>Not only engaging stakeholders in outreach and execution of project activities, but also in decision-making processes, resulting in people taking pride in the project activities, having a high sense of ownership, and taking personal responsibility for successful implementation.</li> <li>Demonstrations of sustainable catchment management activities with key stakeholders done through active collaboration and interaction.</li> </ul>

<b>Box 2 PARTICIPATORY APPROACH (continued)</b>	
<b>Good Practice</b>	<b>Enabling Factors</b>
<ul style="list-style-type: none"> <li>• Genuinely participatory approach that clearly targets and actively engages primary stakeholders, resulting in high levels of ownership, support and involvement.</li> </ul>	<ul style="list-style-type: none"> <li>• Rather than merely being instructive, making deliberate efforts to listen to the inputs of primary stakeholders, and subsequently integrate local knowledge into improved practices.</li> </ul>
<ul style="list-style-type: none"> <li>• Flexible adoption of community-initiated interventions.</li> </ul>	<ul style="list-style-type: none"> <li>• Being open to suggestions of stakeholders and taking an adaptive management approach allowing changes to the original project plans.</li> </ul>

### 3.2 COMBINING LOCAL KNOWLEDGE WITH SOPHISTICATED SCIENCE

The project took an innovative approach in combining local knowledge with sophisticated science, and successfully promoted a diversity of trees including indigenous tree species to support diversification of livelihood options (Box 3 and 4). This approach is exemplary in sustainable development initiatives.

Prioritization of project intervention sites was based on objective scientific analysis of key degradation hotspots using satellite data and ground-truthing in the field, followed by informed decision-making by key stakeholders. This resulted in the inclusion of sites in the middle regions of the catchment (*moyen-plateau*) as well as at altitudes over 1,900 m above sea level (*haute-plateau*), which were identified as erosion hotspots but are excluded by most development interventions due to their inaccessibility and security issues.

In the past, forestry services in the Lake Tanganyika basin promoted monocultures of mostly non-indigenous trees, such as pine, cypress and eucalyptus species. This led to a loss of local biodiversity, possibility of biological invasions, and ecological problems related to water retention and erosion. The project worked together with farmers, and made extensive effort to understand their perspectives and to find innovative solutions for both the environment and improvement of local livelihoods.

Through the involvement of the project and the support from ICRAF, a process was catalysed to induce a shift away from monocultures, increase diversity and revalidate indigenous species for use in agroforestry. Local knowledge and understanding about naturally occurring tree species was combined with scientific information about each species, including their different utilities and ecological niches. By working closely together with the farmers and integrating their knowledge, substantial buy-in was generated.

Recommendations were customised to different part of landscapes and different farms, soil types, position, etc. This not only led to an increased diversity of species, but also to better adaptation to the needs of each farmer, situation, and specific location. By offering the possibility to grow a larger diversity of tree species that offer a wider diversity of utilities, local livelihood options are diversified. As such, this approach contributes both to environmental sustainability as well as to sustainability of development opportunities.

**Lesson 2: By taking an innovative approach that combines local knowledge with sophisticated scientific analytical methods and information a diversity of tree species can be promoted for agroforestry, adapted to the specific needs of each farmer, situation, and specific location, resulting in increased opportunities for ecologically sustainable livelihood diversification.**

<b>Box 3 COMBINING LOCAL KNOWLEDGE WITH SOPHISTICATED SCIENCE</b>	
<b>Good Practice</b>	<b>Enabling Factors</b>
<ul style="list-style-type: none"> <li>• Prioritization of intervention sites based on scientific analysis and informed decision-making by key stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>• Targeting of sites and approaches by an objective analysis of key degradation hotspots prior to commencing field activities.</li> <li>• Hotspot analyses using satellite imagery provided a visual tool for site targeting.</li> <li>• Ground-truthing of satellite analyses by fieldwork.</li> <li>• Following participatory approach, involving functionaries in analyses in order to generate buy-in.</li> <li>• Analyses and joint decision-making with key stakeholders resulting in the inclusion of sites higher up catchment, which are an important source of sedimentation and are excluded by most development interventions due to inaccessibility, resulting in increased buy-in from stakeholders.</li> </ul>
<ul style="list-style-type: none"> <li>• Integration of local knowledge and sophisticated science to improve catchment management practices.</li> </ul>	<ul style="list-style-type: none"> <li>• Rigorous, iterative approach, combining local knowledge and local understanding about natural vegetation and tree species with sophisticated, up-to-date scientific knowledge.</li> <li>• Inputs and technical backstopping by expert on both agroforestry and livelihoods.</li> <li>• Obtaining an understanding of farmer's perspectives, and of how environmental degradation relates to farming activities, so that solutions can be found and promoted.</li> <li>• Generating buy-in and support by working closely together with farmers and integrating their knowledge.</li> </ul>
<ul style="list-style-type: none"> <li>• Promoting diversity of agroforestry species, including indigenous trees that are better adapted to local circumstances.</li> </ul>	<ul style="list-style-type: none"> <li>• Scientific analysis to ensure appropriate tree species for each location and specific needs of the farmers.</li> <li>• Workshops to receive stakeholder inputs on preferred tree species.</li> <li>• Awareness raising to ensure that stakeholders understand and appreciate the value of species diversity in the agroforestry landscape.</li> </ul>

### **3.3 PROMOTING GOOD CATCHMENT MANAGEMENT PRACTICES**

The interventions of the project took place in an area characterised by high poverty rates and limited capacity for sustainable catchment management practices at the community level. By promoting collaboration and mutual capacity strengthening among members of local associations including

community based organisations (CBOs) and non-governmental organisations (NGOs), the project successfully managed to promote a range of sustainable catchment management practices (Box 4).

In total, 27 demonstration sites were successfully established by the project, spread out over the three sub-catchments (Figure 3). These sites are congruent with the areas that were identified by the previous UNDP-supported, GEF-financed Lake Tanganyika Biodiversity Project (Bombi et al. 2000). In each site, a tree nursery was established and good practices in sustainable catchment management were demonstrated.

The project demonstration area included sites in the middle of the catchment (“*moyen-plateau*”) and in the higher areas of the catchments (“*haut-plateau*”) at altitudes over 1,900 m above sea level that were identified as hotspots for erosion and sedimentation. Nurseries in the *moyen-plateau* and the *haute-plateau* included species that are adapted to higher altitude ecological niches.

As a way to enhance sustainability, the tree nurseries were managed by community-based organisations (CBOs), which received support and training from the project. The project also facilitated the foundation of a consortium (CIV) to unite the CBOs in order to offer each other support, strengthen each other’s capacity and further contribute to longer-term sustainability.

To encourage and facilitate participation of targeted stakeholders, most of which had very little financial means, the project provided seeds and polyethylene bags as well as necessary tools. Beneficiaries pointed out that if they would have had to invest personal finances, they would have had less time available for participating in workshops, as they would have had to spend this time in the field earning their living.

In total, almost 2 million seedlings were produced by the nurseries. Over 800 hectares (target: 600 ha) was planted with appropriate tree species, and an additional 167 ha (target: 120 ha) of forest was rehabilitated.

Stakeholders who participated in nursery management signed an agreement with the PMU containing administrative and technical conditions. Lessons learnt from other interventions implemented by WWF had previously demonstrated that this helps to reduce temptation of employing project tools or funding for personal use, and ensures that the work done followed an agreed set of technical guidelines.

With support from ICRAF, the project worked together with farmers to raise awareness about the detrimental effects of traditional agricultural practices such as *luhongolo*<sup>19</sup>, and to offer solutions against erosion. Capacity was built by offering training workshops that specifically targeted and addressed the local needs, as well as through experiential learning by actively participating in good practices in sustainable catchment management. This included activities such as creating contour terraces that facilitate horizontal runoff, and establishing barriers to ensure that water infiltrates the soil and erosion is avoided.

Farmers stated that it is a big challenge to create terraces and horizontal barriers because it is considerably more labour-intensive than the traditional *luhongolo* practice. More work requires more energy and burns more calories while leaving less time for other income generating activities. This is a real trade-off for people who struggle every day to feed themselves and their families. A solution was found in providing a small fee for participants, and promoting the traditional *mulali* approach of community-members collaborating to empower each other. Groups of farmers work together in ploughing, sowing or cultivating each other’s agricultural plots.

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<sup>19</sup> Traditionally, farmers plant their crops from the top to the bottom of a hill. Because the slopes in this region are often riddled with rocks and stones, the farmers collect these and pile them in lines running parallel to the slope, a practice which is locally known as *luhongolo*, and which contributes significantly to high erosion rates.

The *mulali* work was mostly done by women, who became active advocates for the sustainable agriculture interventions promoted by the project. The success of the participatory demonstration activities resulted in an increased number of farmers interested in replicating the contour terracing practice on their own plots.

**Lesson 3: A combination of targeted training, experiential learning, and establishment of collaborative synergies can help overcome challenges of extreme poverty and limited capacity for implementation of sustainable catchment management practices.**

<b>Box 4 PROMOTING GOOD CATCHMENT MANAGEMENT PRACTICES</b>	
<b>Good Practice</b>	<b>Enabling Factors</b>
<ul style="list-style-type: none"> <li>Active demonstration of good practices in sustainable catchment management.</li> </ul>	<ul style="list-style-type: none"> <li>Capacity strengthening by targeted stakeholder training and experiential learning.</li> <li>Involvement of existing local associations (CBOs and NGOs), and encouraging them to work together and form synergies to strengthen each other's capacity.</li> <li>Positive collaboration between WWF and ICRAF to allow complementation and strengthening of each others inputs, with ICRAF providing substantial scientific and analytic capacity, and WWF providing knowledge of the local cultural, historical, socio-economic, security, and political settings, as well as experience based on previous activities in Eastern DRC.</li> <li>Good practices based on a combination of sophisticated scientific analysis and local knowledge (see 3.2).</li> <li>Effective communication and outreach to ensure that stakeholders are aware of the environmental challenges and the solutions offered by the project.</li> <li>Development and implementation of environmental education strategy to support sustainability (see 3.5).</li> </ul>
<ul style="list-style-type: none"> <li>Facilitating community-based management of local nurseries.</li> </ul>	<ul style="list-style-type: none"> <li>Training on selection of appropriate agroforestry species.</li> <li>Provision of seeds, and necessary tools for nurseries for free to encourage participation by stakeholders with limited financial means.</li> <li>Involvement of existing local associations and encouraging them to work together to strengthen each other's capacity.</li> <li>Signing of contracts between project and participants to ensure technical specifications are being followed, and project resources are not abused.</li> </ul>
<ul style="list-style-type: none"> <li>Promoting diversity of agroforestry species, including indigenous trees that are better adapted to local circumstances.</li> </ul>	<ul style="list-style-type: none"> <li>Scientific analysis to ensure appropriate tree species for each location and specific needs of the farmers (see 3.2).</li> <li>Workshops to receive stakeholder inputs on preferred tree species.</li> <li>Awareness raising to ensure that stakeholders understand and appreciate the value of species diversity in the agroforestry landscape.</li> </ul>

Box 4 PROMOTING GOOD CATCHMENT MANAGEMENT PRACTICES (continued)	
Good Practice	Enabling Factors
<ul style="list-style-type: none"> <li>Promoting erosion control through contour terracing.</li> </ul>	<ul style="list-style-type: none"> <li>Workshops to explain negative effects of traditional agricultural methods (<i>luongolo</i>) and provide training on how to establish contour terraces.</li> <li>Evidence of decreased erosion and increased productivity on demonstration plots is successful in convincing others that it is worth investing extra energy to establish erosion control measures.</li> <li>Local communication champions can generate interest of others for replication of good practices.</li> <li>Community-based solutions such as <i>mulale</i> empowers individuals by working as a group.</li> <li>Providing a small fee to encourage participation of stakeholders with limited financial means.</li> </ul>

### 3.4 PROMOTING ENERGY-EFFICIENT TECHNOLOGIES

The production of improved energy-efficient cooking stoves was one of the greatest achievements of the project, providing an excellent example of taking a business perspective to ensure environmental sustainability (Box 5). One of the factors that facilitated this success was that the project encouraged several CBOs to form a syndicate (SAFAU) in order to strengthen each others capacity. A workshop space and transport was provided by one of the members of SAFAU, which besides training and facilitation of experiments for selecting the best stove received very little support from the project. The synergy had a catalytic effect, and lead to collaboration with an NGO that uses the SAFAU workshop to grow mushrooms.

Another factor that contributed to the success of this activity is that women were actively involved in experiments to select the best and most efficient stove, as well as in the production of the stove. The women who participated in the experiments named the improved stove the *Jiko linda mazingira* (stove to protect the environment). The production of the improved stoves contributed to emancipation of women, as they participated in training and skilled labour, and were treated as being equal to the men. The women were also actively engaged in promoting and marketing the stoves. At present, 13 men and 17 women work in the SAFAU workshop.

The improved stoves use half the amount of charcoal that traditional stoves need. It is made of more durable clay that breaks less easily than the clay used for most other stoves. The stoves themselves are burnt in a specially designed kiln that has thick insulation and uses grain-waste as fuel. With each individual purchase, the stoves help to protect the environment and contribute to improving local livelihoods.

SAFAU successfully sells the *Jiko linda mazingira* , and there is a great demand for the improved stoves. The stoves are sold for a promotional price of USD 5, which is cheaper than most stoves of comparable size and quality (USD 6-8). Over a period of less than six months, SAFAU sold 1,300 stoves at USD 5

each (total USD 6,500). SAFAU agreed to reinvest the majority of their earnings in their workshop to expand their activities and have already opened a retail shop in Baraka, a town south from Uvira in the Fizi Territory.

**Lesson 4: Gender-sensitive, participatory selection and promotion of energy-efficient technologies offers lucrative opportunities for equitable, ecologically sustainable livelihood diversification.**

<b>Box 5 PROMOTING ENERGY-EFFICIENT TECHNOLOGIES</b>	
<b>Good Practice</b>	<b>Enabling Factors</b>
<ul style="list-style-type: none"> <li>• Promotion of energy-efficient alternatives by introducing improved cooking stoves.</li> </ul>	<ul style="list-style-type: none"> <li>• Participatory experimentation and selection of improved cooking stoves.</li> <li>• Establishing a unified consortium to join CBO's in order to work together and strengthen each other's capacity.</li> <li>• Taking gender issues into account by deliberately involving women in experiments, selection process, manufacturing, and promotion of stoves.</li> <li>• Implementing production cost and market analysis to ensure that improved stoves are cost-effective and attractive to local buyers.</li> <li>• Improving the energy-efficiency of the kiln in which the stoves are burnt by increasing its insulation and using grain leftovers for fuel.</li> </ul>

### **3.5 EFFECTIVE AWARENESS RAISING**

Extensive efforts were made to model environmental awareness raising and education activities according to local needs, using a variety of traditional and innovative communication tools and adapting the language to the targeted stakeholder groups (Box 6).

Because analphabetic stakeholders were identified as an important group for environmental education (Mlondani 2012), oral communication methods such as theatre, song, and radio broadcasts were used to reach this group. Women were also identified as a key group, and they were deliberately targeted with outreach activities. In addition, women were used as advocates for sustainable environmental management, and they were actively engaged in raising awareness of others (Mavinga 2012). The adaptation of oral communication strategies using local languages, and active targeting of women as champions for good practices in sustainable catchment management contributed to high levels of stakeholder awareness about the environmental challenges as well as solutions.

The project furthermore implemented a study to identify the most appropriate way to integrate environmental education into local school curricula, which was successfully and enthusiastically picked up by both teachers and students.

**Lesson 5: Formulation of environmental outreach strategies according to local needs, taking into account issues of illiteracy, gender and languages contributes to successful awareness raising of targeted stakeholders.**

Box 6 EFFECTIVE AWARENESS RAISING	
Good Practice	Enabling Factors
<ul style="list-style-type: none"> <li>• Successful communication efforts resulting in increased awareness of targeted stakeholders about environmental problems and knowledge of possible solutions.</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental awareness raising and education activities formulated according to local needs.</li> <li>• Using a wide variety of traditional as well as innovative communication tools, including: workshops, radio programs, songs, theatre productions, T-shirts and banners with slogans, festive events, printed media, and Facebook postings.</li> <li>• Targeting a large group of stakeholders including farming communities, women, teachers and students, local authorities and Government institutions.</li> <li>• Implementation of activities icw relevant institutions (ISDR, ISAD, Service de l'Environnement).</li> <li>• Continued broadcasting of a Radio program about environmental issues after project closes, thus contributing to sustainability of outreach actions.</li> <li>• Adaptation of language to stakeholders (French, Kiswahili, local languages).</li> </ul>
<ul style="list-style-type: none"> <li>• Integration of environmental education in school curricula.</li> </ul>	<ul style="list-style-type: none"> <li>• Involving teachers and students in environmental awareness raising and education with specifically adapted lessons and tree planting activities.</li> </ul>



## 4 CHALLENGES AND SOLUTIONS FOR SUSTAINABILITY

The project was implemented under difficult circumstances, with limited time available and in the context of a protracted conflict, which adds a layer of complexity to catchment management interventions, limits options for sustainability, and increases the need for capacity enhancement of Government institutions, promotion of synergies and establishment of platforms for conflict resolution, implementation of security measures, and strategic liaisons across organisations to achieve up-scaling of good practices and longer term impacts.

Key lessons were learnt from the challenges encountered in ensuring future sustainability (Box 7), related to security risks, capacity gaps, poverty, and gender inequity issues, which are discussed below. Lessons learnt related to project design and management as well as M&E processes are also presented here.

### BOX 7 CHALLENGES AND SOLUTIONS FOR SUSTAINABILITY

- Post-conflict context adds a layer of complexity to project interventions, including weak local markets, extreme poverty, and security issues. As a result, the ability of local stakeholders to ensure long-term continuation of sustainable catchment management interventions without extended support is limited. Continued liaison with institutes and/or organizations such as WWF that have long-term commitments in the region is needed to ensure mainstreaming of sustainable catchment management opportunities in future interventions.
- The design of future interventions should emphasize the socio-economic opportunities that sustainable natural resource management offers for rebuilding societies, including:
  - Agroforestry interventions using appropriate species and sustainable agriculture investments can mitigate mismanagement and overexploitation of natural resources.
  - Providing ecologically sustainable economic opportunities offers an alternative to continued conflict and can jump-start local economies.
  - Improvements in economic and social conditions promote stability and thereby avoid further destruction of productive assets.
- Government natural resource institutions are hampered by significant capacity gaps. Focused approach is required to promote an enabling environment for sustainable integrated catchment management through:
  - Review and reform of policy and legal frameworks
  - Establishing sustainable financing systems
  - Improving organizational frameworks
  - Promoting the establishment of extension services
  - Promoting adequate management instruments
- Women are disproportionately affected by the consequences of land degradation, and have great potential as stewards for sustainability. Greater efforts need to be made to recognize and understand the roots of inequity, and explicitly take gender issues into account during project design and implementation.

## 4.1 LIMITED RULE OF LAW AND SECURITY ISSUES

The presence of armed groups and limited rule of law in the Kivu region causes security threats and limits the area of impact for most development and natural resource management interventions. One of the achievements of the project was its ability to successfully work in remote areas in spite of the security issues. The team made a conscious and calculated assessment to accept a certain amount of risk, in order to achieve a greater impact. Risks were minimized by establishing good contacts with its extensive stakeholder group throughout the project area, actively monitoring the security situation, and putting a contingency plan in place in case of imminent threats in order to control adverse impacts on project staff and activities.

The project collaborated with stakeholders in areas higher up in the catchment (*moyen-plateau* and *haute-plateau*) that are characterised by relative inaccessibility and elevated security risks. It was important to include these areas because analyses indicated that several land degradation hotspots exist in the higher catchment. As such, the project was able to successfully include stakeholders that are excluded by the majority of development interventions. An additional result was increased buy-in and trust among the larger stakeholder population, who realised that the project team was really there to support them, in spite of challenging field circumstances.

The continued presence of armed groups not only causes ongoing security threats, but also poses unique challenges for the sustainability of good practices in environmental management. Rebels contribute to environmental degradation, as they engage in illegal cutting of forests to sell firewood and charcoal. Due to the limited rule of law, there is very little that can be done to control these illegal, environmentally detrimental activities. However, by stimulating the use of energy-efficient alternatives, the project generated an indirect effect on reducing the market for illegally cut firewood and charcoal.

The limited rule of law and high crime rates also affected the project in other areas as seedlings were stolen from nurseries and illegal free-ranging goats consumed saplings. A solution was found in awareness raising and discussions with community members. This helped to some extent in decreasing the number of free-ranging goats around areas where project stakeholders had planted trees. Community-based measures such as random patrols, and using guards, dogs and/or geese might also help to protect nurseries might provide solutions against theft. However, in the longer term, capacity of relevant Government institutions needs to be enhanced to ensure law enforcement.

**Lesson 6: Limited rule of law in protracted conflict context leads to security risks and high crime rates, which can hamper project activities. By minimizing and managing security risks in collaboration with local communities, significant environmental impacts and livelihood improvements can be achieved in areas that are excluded from most development interventions.**

Box 8 LIMITED RULE OF LAW AND SECURITY ISSUES	
Challenge	Possible Solutions
<ul style="list-style-type: none"> <li>Continued presence of armed groups in region causes security threats and limits the area of impact.</li> </ul>	<ul style="list-style-type: none"> <li>Communication networks among stakeholders are useful in monitoring risks and keeping project staff informed about possible security threats.</li> <li>Working closely with stakeholders in high risk areas can increase environmental impact as well as levels of buy-in and support among the overall stakeholder group.</li> </ul>

<b>Box 8 LIMITED RULE OF LAW AND SECURITY ISSUES (Continued)</b>	
<b>Challenge</b>	<b>Possible Solutions</b>
<ul style="list-style-type: none"> <li>Limited rule of law and high crime rates can hamper project activities (e.g. theft of seedlings from nurseries, illegal free-ranging goats consuming saplings, illegal cutting of trees from community forests).</li> </ul>	<ul style="list-style-type: none"> <li>Awareness raising and community-based solutions can help reduce problems, but to limited extent.</li> <li>Offering communities livelihood alternatives can also help to reduce crime rates.</li> <li>Capacity of relevant Government institutions requires enhancement.</li> </ul>

## 4.2 ENHANCING GOVERNMENT INSTITUTION CAPACITY AND ENGAGEMENT

A significant challenge in post-conflict contexts with fragile institutions, weak civil societies and divided populations is how to ensure effective ownership and facilitate continuation of best practices in the future. Active involvement in sustainable natural resource management interventions by Government institutions is paramount to long-term success and continuation. While project was greatly successful in ensuring engagement and ownership at the community and customary leadership level, achieving a similar results with Government institutions proved more difficult.

Management and research institutions in the Eastern DRC have limited financial resources, as well as limited human capacity, which restricts the level at which they can actively engage in sustainable NRM interventions. The magnitude of the capacity challenges and the absence of a sufficiently enabling environment with respect to legislative frameworks, enforcement opportunities, financing and incentive structures requires a focused approach, and significant investment of human and financial resources.

Although the project successfully targeted and engaged representatives of the local Administration and CRH in outreach activities and workshops, it was not able to sufficiently address the capacity challenges of these institutions. This was largely a result of the overall project design, which did not adequately address the capacity needs of Government institutions and did not allocate sufficient funding for the focused approach that is required to sufficiently enhance the capacity of Government institutions for sustainable environmental management.

Based on the experiences of the project and on lessons learnt by others (Cap-Net 2002 and references therein), future interventions aiming at enhancing capacity of Government institutions for sustainable natural resource management should address the following aspects; i) Review and reform of policy and legal frameworks; ii) establishment of sustainable financing systems; iii) improvement of organisational frameworks; iv) promotion of extension services, and; v) promotion of adequate management instruments (Box 9). UNDP's international network for capacity development in sustainable water resources management (Cap-Net<sup>20</sup>) developed an online toolbox, which provides theoretical information as well as practical steps that could be useful as a basis for drafting a comprehensive strategy for future interventions (Cap-Net 2002).

Project stakeholders proposed that a possible solution for enhancing the engagement of Government partners and enhance mutual capacity of a group of stakeholders is to establish a Catchment Management Committee (CMC). The CMC would form a unified body that could lead processes relevant to the continuation of sustainable environmental interventions, reach out to relevant organisations that are already active in the region, and act as a focal point for possible future partners, fundraising and capacity

<sup>20</sup> <http://www.cap-net.org>

building initiatives. The CMC should include members of Government institutes, and customary authorities, as well as CBOs and NGOs.

CBO's and NGO's that were involved with the project received capacity building on sustainable land management, and they should be closely involved in future interventions. They could play an important role as advocates and facilitators of change, as trainers of others, and as implementers of good practices. While they may play an important support role, these organisations themselves cannot institutionalise sustainable land management. It is therefore important that members of Government institutes play an active role in the CMC as well.

By including a range of stakeholders that would otherwise have little opportunity to actively engage, the CMC could indirectly play a role in positively contributing to conflict resolution in the region. To promote transparency, its Secretariat could be shared between the two key Government Institutions, and an international organisation with local or regional presence could be invited as a permanent member of the committee. This would also stimulate future knowledge exchange and encourage a diverse group of stakeholders to strengthen their interrelationships and act together to generate ecologically sustainable development effectiveness.

**Lesson 7: Enhancing capacity of Government institutions requires a focused approach to review and reform of policy and legal frameworks, establish sustainable financing systems, improve organisational frameworks, promote extension services, and promote adequate management instruments.**

<b>Box 9 ENHANCING GOVERNMENT INSTITUTION CAPACITY AND ENGAGEMENT</b>	
<b>Challenge</b>	<b>Possible Solution</b>
<ul style="list-style-type: none"> <li>Government natural resource institutions have limited capacity for sustainable integrated catchment management.</li> </ul>	<ul style="list-style-type: none"> <li>Focused approach is required to promote an enabling environment for sustainable catchment management through: i) review and reform of policy and legal frameworks; ii) establishing sustainable financing systems; iii) improving organisational frameworks; iv) promoting the establishment of extension services, and; v) promoting adequate management instruments.</li> </ul>
<ul style="list-style-type: none"> <li>Insufficient level of engagement and ownership by local Government institutions.</li> </ul>	<ul style="list-style-type: none"> <li>Joint-platform is needed to lead processes relevant to the continuation of sustainable environmental interventions.</li> <li>Establishment of Catchment Management Committee could offer solution.</li> </ul>

### **4.3 ENSURING SUSTAINABILITY**

Many of the challenges experienced by the project related to the overwhelming magnitude of environmental degradation, and the extreme poverty and limited economic development opportunities that hamper possibilities of local stakeholders to invest in scaling-up and long-term continuation of good practices in sustainable catchment management (Box 10).

As a way to facilitate sustainability, the project supported the foundation of synergies between existing CBOs and NGOs (see 3.3 and 3.4). This enabled mutual capacity strengthening through collaboration and knowledge exchange. The synergies also provided a platform for communication and conflict resolution, bringing together people that would otherwise be less likely to engage with each other, and offering them

the benefits of group support. In addition, the synergies offer opportunities for members to benefit from shared resources such as transport and workshop/office space, as well as from joint-financing systems.

Although these are positive solutions that can help facilitate replication and sustainability, the scale at which the synergies can have impact is likely to be small due to their lack of substantial financing and their limited capacity to alter the contextual factors related to the protracted conflict in the region (e.g. lack of good governance, limited institutional capacity, inadequate rule of law, see section 1.2). As such, a larger-scale approach combining the strengths of multiple organisations that have substantial capacity to influence change, and that have long-term development commitments in the region is required to increase impacts and improve chances of sustainability.

Due to its presence in the field, its extensive experience and long-term interests in the Kivu region, WWF would be an obvious choice as an institution to replicate the successful project interventions. UNDP has a longstanding commitment to environmentally sustainable development in DRC and could play an important role in facilitating donor-support. Increased collaboration with other international organisations that are active in the region and that have overlapping interests should be encouraged. To ensure continuity, collaboration should be sustained with CBOs and NGOs that participated in the project.

Establishing links with the interventions and relevant institutions identified in the DRC National Action Plan for SAP implementation (MADR 2011) could be helpful to increase Government buy-in. The establishment of a Catchment Management Committee (see section 4.2) could offer a useful platform for collaboration. Linkages could also be established with the international Landcare<sup>21</sup> network (e.g. through ICRAF) in order for stakeholders to access a wider network of support and knowledge exchange for sustainable catchment management.

A joint-strategy could be designed that recognizes the complexity of the post-conflict context, ensures that the political, social, institutional, and financial context is well-analysed, and integrates good practices and lessons learnt from this project. Lessons learnt from other post-conflict situations (e.g. UNDP 2010) indicate that sustainable natural resource management interventions can provide multiple opportunities to help rebuild societies. Combining this with the lessons learnt from the present project, provides convincing arguments for securing future donor support:

- Agroforestry interventions using appropriate species and sustainable agriculture investments can mitigate mismanagement and overexploitation of natural resources.
- Providing ecologically sustainable economic opportunities offers an alternative to continued conflict and can jump-start local economies.
- Improvements in economic and social conditions promote stability and thereby avoid further destruction of productive assets.

Other arguments for securing donor support can be found in the fact that the Uvira Territory borders the largest, most remote block of intact montane forests in Africa, which was identified as an important area for biodiversity protection, and a key habitat for wildlife including chimpanzees and endangered Grauer's gorilla's. By promoting sustainable agriculture and agroforestry practices, and by reducing the need for firewood and charcoal of the adjacent communities in the Uvira Territory, land degradation pressure on the buffer zone around the Ithombwe forests can be reduced.

To address issues of extreme poverty, a solution could be to establish a revolving fund<sup>22</sup>. Lessons learnt by the project in Zambia where similar sustainable catchment management interventions have been implemented demonstrated that revolving funds can be very effective in providing small-scale poverty alleviation (Tortell 2012). Care should be taken that there is an appropriate institution to manage the

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<sup>21</sup> Landcare is a community-based approach that influences the way people interact with their land. The network helps with knowledge sharing and support mechanisms. See: <http://worldagroforestry.org/projects/landcare>

<sup>22</sup> Revolving Fund is a capital raised with a specific purpose, which can be made available to the same users more than once. Revolving refers to the fact that the finances circulate between the funds and the users. Revolving funds are established with the intention that they should be self-sufficient and sustainable.

revolving fund, and that proposals of community members who wish to access the fund are reviewed by experts to ensure that livelihood diversification alternatives are environmentally friendly.

Project beneficiaries mentioned that it would be useful if the PMU could provide estimates of the costs of establishing and maintaining nurseries, and share these with and potential donors and other parties interested in continuing this activity. Training on value adding and marketing of agroforestry products and improved energy-efficient stoves could be provided to increase financial sustainability. Furthermore, it was observed that local stakeholders have limited capacity for identifying funding opportunities, proposal writing and fundraising, and it might be beneficial if future projects could offer training.

**Lesson 8: The overwhelming magnitude of environmental degradation and extreme poverty limits possibilities of local stakeholders to invest in scaling-up and long-term continuation of good practices in sustainable catchment management. Therefore, solutions need to be sought in a larger-scale approach, combining the strength of multiple organisations with substantial capacity to influence change and long-term development commitments in the region. Opportunities for securing donor support exist in the fact that sustainable resource management interventions offer multiple possibilities to help rebuild societies. Biodiversity conservation arguments are found in the fact that the region borders the largest block of intact montane forests in Africa, which include important habitats for endangered wildlife.**

<b>Box 10 ENSURING SUSTAINABILITY</b>	
<b>Challenge</b>	<b>Possible Solutions</b>
<ul style="list-style-type: none"> <li>• Project impacts are extremely small compared to the magnitude of environmental degradation in the region.</li> </ul>	<ul style="list-style-type: none"> <li>• Continued collaboration with Government and organisations that have sufficient capacity and long-term commitments in the region is required to promote continuation and scaling up of successful sustainable environmental management interventions that were demonstrated by the project.</li> </ul>
<ul style="list-style-type: none"> <li>• Extreme poverty hampers ability of local stakeholders to ensure long-term continuation of sustainable catchment management interventions.</li> </ul>	<ul style="list-style-type: none"> <li>• The establishment of synergies between CBOs and/or NGOs strengthens mutual capacity, and offers opportunities for group financing and small-scale replication of good practices.</li> <li>• A larger-scale approach, combining strengths of multiple organisations would be beneficial to ensure continuity, building on the experiences of the project and emphasising the opportunities of sustainable catchment management for improving livelihoods and rebuilding societies.</li> <li>• Socioeconomic and market studies need to be implemented at early stage, and followed up by mainstreaming of sustainable financing mechanisms in project activities.</li> </ul>

#### **4.4 ENVIRONMENTAL ASPECTS**

Several aspects were identified that may limit the environmental impacts of the project, including the short duration of the intervention (2 years and 4 months), use of exotic species for agroforestry purposes, and the effects of global climate change on reducing the length of the agricultural seasons (Box 11).

The good practices promoted by the project, including identification and participatory prioritisation of intervention sites (see section 3.3), take a substantial amount of time. Up to six months can be spent on the initial analysis and preparations, before a single tree is planted. Before establishing nurseries, it is necessary to analyse the type of trees that are most suitable for each site and situation. Seeds then need to be sourced, and seasonal aspects need to be taken into account prior to planting. Once trees are planted, it can take several years before measurable impacts can be obtained in reducing erosion and providing services to improve local livelihoods (e.g. producing fruits, timber, etc.). The time required for trees to provide services influences the likelihood of larger-scale replication, and thus sustainability. It is important for future projects to take these aspects into account during design, planning, and implementation, in order to ensure that sufficient time is available to obtain visible results.

Another lesson learnt by the project is the importance of maintaining a level of caution about the potential effects of agroforestry species on biodiversity. The project promoted several agroforestry trees that are known to cause a risk as potential invasive species (e.g. *Cassia siamea*, *Leucaena diversifolia*). Improved collaboration and coordination with IUCN's Global Invasive Species Programme, as well as awareness raising of key stakeholders (agroforestry experts, foresters, farmers, Government partners) is recommended for future projects in order to discourage use of potentially invasive species.

An imminent threat that is expected to become increasingly relevant is global climate change. This issue was not well-integrated in the project design, however, the impacts of global climate change are increasingly affecting the Central-Eastern African region. For instance, there is evidence that the surface water of Lake Tanganyika is increasing in temperature as a result of climate change (O'Reilly et al. 2003). Researchers from CRH indicated that the rainy seasons in the South Kivu region are becoming shorter as a result of climate change<sup>23</sup>. If these patterns persist, this will have significant impacts on local livelihoods, as the productivity of the fisheries, agricultural and agroforestry sectors is expected to decline.

The activities of the project implicitly contribute to mitigation and adaptation to the effects of climate change, by offering livelihood alternatives, increasing tree cover, implementing measures against extreme weather events such as floods (erosion control), and increasing resilience by promoting a diversity of tree species. However, opportunities were missed because expected climate change impacts on agriculture and agroforestry were not explicitly addressed. A lesson learnt for future project is to mainstream climate change issues in project design and implementation, analyse and model the expected impacts, and actively promote mitigation and adaptation measures such as agroforestry species that have a wider tolerance for changes in temperature or precipitation.

**Lesson 9: Environmental aspects including the time required for trees to grow, the potential effects of exotic trees on biodiversity, and the effects of climate change on reducing rainy seasons need to be taken into account for future interventions, as these can have a significant impact on reducing sustainability.**

<b>Box 11 ENVIRONMENTAL ASPECTS</b>	
<b>Challenge</b>	<b>Possible Solutions</b>
<ul style="list-style-type: none"> <li>Limited project duration hampers the ability to achieve visible improvements of catchment degradation, especially also since planting of seedlings is dependent on seasonal aspects.</li> </ul>	<ul style="list-style-type: none"> <li>Realistic planning must take into account the duration of the process to analyse priority intervention sites and determine appropriate plant/tree species, as well as the average time it takes for plants/trees to grow.</li> <li>Seasonal aspects need to be integrated in project design, planning and implementation.</li> </ul>

<sup>23</sup> According to CRH the rainy seasons in the region have reduced from 9 to 7 months over the past few years, and there is concern that this may become a long-term pattern resulting from global climate change.

<b>Box 11 ENVIRONMENTAL ASPECTS (Continued)</b>	
<b>Challenge</b>	<b>Possible Solutions</b>
<ul style="list-style-type: none"> <li>• Agroforestry tree species were promoted that are potentially invasive and can have negative impacts on biodiversity.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintaining caution about the potential negative impacts of natural resource management interventions on biodiversity.</li> <li>• Raising awareness of key stakeholders (e.g. agroforestry experts, foresters, farmers, Government partners) about the negative impacts of invasive species.</li> </ul>
<ul style="list-style-type: none"> <li>• Global climate change is expected to impact the length of rainy seasons, and reduce agriculture and agroforestry productivity.</li> </ul>	<ul style="list-style-type: none"> <li>• Actions to mitigate and adapt to the impacts of climate change should be mainstreamed in all future interventions.</li> </ul>

## 4.5 LAND- AND FOREST OWNERSHIP ISSUES

Landownership issues greatly affect sustainability. Customary, informal and statutory land-tenure systems in DRC are complex, and parcels of land can be claimed by multiple individuals simultaneously. The protracted conflict situation in the Kivu region results in repeated departure and return of internally displaced persons, which influences and complicates land control issues (Huggins 2010). Many farmers in the region, especially in the lower catchment areas, are tenants instead of owners. This places constraints on the level to which they are willing or able to invest in environmentally sustainable solutions such as establishing contour terraces or a diversity of tree species, which require intensive labour as well as financial resources.

The project solved this by including landowners in awareness raising activities and engaging them in discussions about the long-term benefits of good practices in agriculture and agroforestry. While this had positive results, it addresses only part of the problem. To increase sustainability, the complexity of land-tenure systems needs to be analysed prior to project interventions, and the capacity of relevant Government institutions dealing with landownership issues needs to be enhanced.

As an example of good practice in sustainable catchment management, the project encouraged local communities to delimit areas of land for natural forest regeneration. While this was a successful activity that was enthusiastically received by the stakeholders, there are several challenges associated with legal aspects and long-term protection of these forests. In 2002, the government of the DRC adopted a new forest law (La loi n° 011/2002 du 29 Aout 2002 portant Code Forestier), which includes revised points pertinent to engaging communities in forest management, improving procedures for sustainable forest exploitation, and protecting forests. While this law offers an ambitious theoretical framework to improve forest management, its execution remains fraught with difficulties (REM 2011).

In the Uvira Territory, limited capacity for surveillance and enforcement hampers effective community-based management of forest resources. Furthermore, in order to cut trees in a community-protected area, tax needs to be paid to the local Administration. This structure imposes the risk that anyone who pays the required fee can cut trees in protected areas, without the profits necessarily flowing back to the community itself. If the community does not have sufficient ability to control the forest resources itself, then the long-term benefits of community-protected forests will be limited.

**Lesson 10: Underlying institutional and legislative challenges related to landownership and forest protection need to be addressed in to ensure sustainability of project interventions aimed at catchment management and forest conservation, and in order for local communities to benefit in the longer term.**

<b>Box 12 LAND- AND FOREST OWNERSHIP ISSUES</b>	
<b>Challenge</b>	<b>Possible Solutions</b>
<ul style="list-style-type: none"> <li>• In many cases, the people working the fields are tenants instead of landowners, which limits their willingness/ability to invest in long-term improvements.</li> </ul>	<ul style="list-style-type: none"> <li>• By raising awareness of both tenants and landowners about the benefits of sustainable catchment management, willingness to invest can be increased.</li> <li>• Formal legislation, traditional and customary landownership and tenure systems need to be analysed to increase the possibility of finding sustainable solutions.</li> </ul>
<ul style="list-style-type: none"> <li>• Planting indigenous tree species poses questions about ownership, as these are traditionally seen as community property.</li> </ul>	<ul style="list-style-type: none"> <li>• Engaging in discussions with community-members and implementing awareness raising campaigns can help in reaching agreement about ownership issues.</li> </ul>
<ul style="list-style-type: none"> <li>• Lack of adequate structures for surveillance and law enforcement limits opportunities for community-based forest management.</li> </ul>	<ul style="list-style-type: none"> <li>• Weaknesses in legislation need to be analysed and addressed in order for communities to appropriately benefit from their investments in protecting forests.</li> <li>• Capacity for surveillance and law enforcement needs to be enhanced.</li> <li>• Opportunities exist for community-based surveillance and enforcement systems that could be further explored as a way to protect the forests.</li> </ul>

## **4.6 GENDER INEQUITY**

Women form 51% of the economically active population in DRC (Kasemuana 2009). They are the primary users of many natural resources that provide the means for basic survival. In rural communities in Africa, women are charged with 80% of the food security and 90% of the water security. In rural communities, women rely heavily on natural resources such as firewood and water, and are disproportionately impacted by the consequences of land degradation (New Course 2010, and references therein).

In Eastern DRC, where many men have died during the recurrent conflicts, women carry an increasingly heavy burden. Due to patriarchal practices and cultural beliefs, women generally have very limited to no landownership rights in this region. After her husband dies, a woman may lose the right to the land, which then goes to his brothers or other related male family members (COFAPRI 2013). Subsequently, in order to feed their families, widows have to rent land. The rent can be up to half the profits of the annual harvest, placing an even larger burden on these women.

The project identified women as a key stakeholder group for communication and environmental education (Mlondani 2012), and they were actively engaged as champions for outreach activities. The project also implemented an environmental awareness raising campaign during international Women’s Day.

Nonetheless, women were underrepresented during training workshops, possibly because of their limited level of education and literacy. At the same time, women were disproportionately charged with heavy field labour in the demonstration sites. One of the farmers from the *haute-plateau* did state that his community

was aware of gender inequity issues, and men would make an effort to help women with field work. As such, there could have been more opportunities for the project to address gender inequity issues if this would have been better integrated in the design and implementation.

The production of improved cooking stoves formed a positive exception, as women played an important role throughout the process (section 3.4), which is likely to have contributed to the success of this activity.

**Lesson 11: Since women are primary users of natural resources and have great potential as stewards for sustainability, future catchment management interventions should ensure that gender equity is taken into account.**

<b>Box 13 GENDER INEQUITY</b>	
<b>Challenge</b>	<b>Possible Solutions</b>
<ul style="list-style-type: none"> <li>• Women are disproportionately charged with field labour.</li> </ul>	<ul style="list-style-type: none"> <li>• Communication campaigns helped to raise awareness about gender inequity issues.</li> <li>• Gender aspects should explicitly be taken into account during project design and implementation.</li> </ul>
<ul style="list-style-type: none"> <li>• Women do not receive equal training opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Training methods should be adapted to address gender imbalance.</li> </ul>

## 4.7 MONITORING & EVALUATION

Monitoring and evaluation forms the basis for adaptive management, as it is a key tool for gathering information and learning from the factors that enable successes and those that hamper progress. The M&E processes adopted by the project suffered from several shortcomings, and multiple lessons have been learnt for future improvement (Box 14).

In order for monitoring and evaluation to be useful for informing adaptive management, the M&E framework and process should be sufficiently understood by everyone who is involved in gathering and interpreting the data. Appropriate data needs to be collected and adequately analysed, and there should be sufficient opportunities for informing learning processes.

The overall M&E framework used an APR/PIR template that was prepared by UNDP, based on the original project document, covering four National Components plus a Regional Component. The outputs of the DRC Component related to Outcome 3 of the regional project:

*Reduction of sedimentation resulting from demonstration catchment management interventions, providing significant livelihood benefits to local people, seeking long-term adaptation measures to changing climatic regimes.*

Indicators included in the APR/PIR for the DRC Component largely focused on quantitative data such as number of seedlings produced and hectares planted. This type of data offers useful quantitative information, but it does not provide information about the impacts of different tree species on erosion control and improvement of local livelihoods. The project did collect data on the different agroforestry species used and their various qualities, as well as on survival rates of seedlings in nurseries and survival rates of saplings planted in the field. Stakeholders were trained by ICRAF on how to collect sedimentation

data. This would be important information for learning and adaptation at the national as well as regional level, and should be fed into the overall M&E process.

There are multiple indications that the interventions of the project had a positive effect on improving local livelihoods (e.g. increased productivity in demonstration plots, diversification of agricultural crops and agroforestry species, alternative income generation through successful production and marketing of improved cooking stoves). It would have been useful if the project had collected and disseminated the necessary data to quantify these positive effects, and demonstrate significant changes in the socioeconomic status of project beneficiaries.

Although there is some level of flexibility in adapting the APR/PIR template, it covers the regional project and as such offers limited possibilities for including detailed M&E information at the national level. As such, it would be recommendable for future multi-country projects to adopt a separate M&E framework at the national level that is based on and consistent with the regional framework.

Another complicating factor in the M&E process was the absence of functional feedback loops between the stakeholders in the field, WWF, ICRAF, LTA, PCU, UNDP and the GEF. The LTA had established a regional M&E framework to include both projects of the LTRIMDP, which could have provided very useful comparative information about successes and challenges between the two projects in four countries, if there would have been sufficient communication and feedback among its partners about lessons learnt. Better communication about the M&E framework between WWF, PCU, ICRAF, and UNDP may have resulted in the adoption of an improved monitoring process. A feedback loop between the GEF, UNDP, and partners in the field may help to improve the process and facilitate the establishment of a system that effectively links national M&E frameworks to the regional APR/PIR framework.

**Lesson 12: In order for M&E frameworks to be useful for informing adaptive management, there needs to be an adequate balance between quantitative and qualitative data, the process of collecting and analysing data needs to be understood by everyone involved, and functional feedback loops are required between stakeholders in the field and project partners.**

<b>Box 14 MONITORING &amp; EVALUATION</b>	
<b>Challenge</b>	<b>Possible Solutions</b>
<ul style="list-style-type: none"> <li>M&amp;E framework of limited relevance for informing learning processes and adaptive management.</li> </ul>	<ul style="list-style-type: none"> <li>In case of complex multi-country projects, detailed M&amp;E frameworks should be developed at the national level based on, and consistent with the framework developed for regional monitoring.</li> <li>A workshop on the M&amp;E framework at the start of the project would be beneficial to ensure mutual understanding of what needs to be monitored, how, and why.</li> <li>M&amp;E framework should be based on an adequate balance between quantitative and qualitative targets.</li> <li>In order for the M&amp;E process to be useful for informing adaptive management, a functional feedback loop is required between all relevant partners.</li> </ul>



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**ANNEX II****OVERVIEW OF STAKEHOLDERS INTERVIEWED**

<b>GOVERNMENT</b>	<b>CUSTOMARY AUTHORITIES</b>
Mr. Herman MUSHOMBE Supervisor Environment Local Administration of the Uvira Territory Uvira, DRC +243 997 721 654	Mr. Edmond LENGHE LWEGELEZA III Mwami (customary leader) of the Chiefdom of the Bavira Uvira, DRC + 243 999 802 132
<b>GOVERNMENT INSTITUTE</b>	
Dr. Nshombo MUDERWHA General Director CRH-Uvira Uvira, DRC nshombo.muderhwa@gmail.com	Mr. Theophile Mulimbwa N'SIBULA Scientific Director CRH-Uvira Uvira, DRC ltfmp_drc_uv@yahoo.fr
<b>LAKE TANGANYIKA AUTHORITY</b>	<b>UNDP-GEF PROJECT COORDINATION UNIT</b>
Dr. Henry MWIMA Executive Director Lake Tanganyika Authority Bujumbura, Burundi henry.mwima@lta-alt.org	Mr. Simbotwe Mwiya Regional Project Coordinator UNOPS / UNDP-GEF PCU Bujumbura, Burundi SimbotweM@unops.org
<b>WWF ESARPO</b>	<b>IUCN</b>
Mr. Daniel NZYUKO Interim Coordinator African Rift Lakes Programme WWF ESARPO Nairobi, Kenya DNzyuko@wwfesarpo.org	Dr. Geoffrey HOWARD Global Coordinator Invasive Species Initiative IUCN ESARO Nairobi, Kenya Geoffrey.Howard@iucn.org
<b>ICRAF</b>	
Dr. Fergus SINCLAIR Global Research Leader ICRAF Nairobi, Kenya F.Sinclair@CGIAR.ORG	Ms. Emilie SMITH Consultant, Agroforestry Systems ICRAF Nairobi, Kenya E.Smith@CGIAR.ORG

<b>PROJECT MANAGEMENT UNIT</b>	
Mr. Pacifique NTABAZA Monitoring & Evaluation Officer Acting Project Manager WWF / UNDP-GEF Project Management Unit Uvira, DRC pntabaza@wwfesarpo.org	Mr. Busomere NGENGE Forester Acting Interim Project Manager WWF / UNDP-GEF Project Management Unit Uvira, DRC nbusomere.wwfuvira@gmail.com
Mrs. Gilda MAVINGA Community Outreach Officer WWF / UNDP-GEF Project Management Unit Uvira, DRC gmavie.wwfuvira@gmail.com	
<b>LOCAL STAKEHOLDERS</b>	
Mrs. Tina SHAGAYO Farmer Uvira, DRC	Mrs. Resa BAZIBWA Farmer Uvira, DRC
Mr. Shem MBONGO TUMANI Agronomist CIV Uvira, DRC	Mr. Kungwe OBED Coordinator COOJEAKA Uvira, DRC
Mr. Basil WA PAWENGE BULAMBO Agronomist OSBEDEC Uvira, DRC	Mr. Joseph SONGOLO Supervisor SAFAU Workshop Uvira, DRC +243 993 342 947 safauvira@gmail.com
Mr. Christian MAKINDU Adjunct head of training, SAFAU Workshop Uvira, DRC +243 993 342 947 safauvira@gmail.com	Mr. Jean DE LA CROIX WILONDA President SAFAU Uvira, DRC +243 993 342 947 safauvira@gmail.com
Mr. Sango BENGA President CDC Uvira, DRC +243 817 825 565	Mr. Kasimba NYONGOLO Secretary CDC Uvira, DRC
Mrs. Jina TABU MA BANDIRO Farmer, CDC member Uvira, DRC	Mr. Saidi LUHINDA Agriculturist, CDC member Uvira, DRC

## Annex III Tree Species and Amount of Hectares Planted

	Species	1st campaign Mar-Apr 2011	2nd campaign Jan - Feb 2012	3rd campaign Mar- May 2012	3rd campaign 2nd evaluation	4th campaign Oct- Nov 2012	Total	Ha
<b>Agroforestry</b>	<i>Calliandra</i>	54,098	38,944	3,480	1,045	0	97,567	
	<i>Kirondorondo</i>	0	628	0	0	0	628	
	<i>Leucaena</i>	0	14,029	29,816	590	0	44,435	
	<i>Haegenia abyssinica</i>	0	110	893	527	0	1,530	
	<i>Mugote</i>	0	70	0	0	0	70	
	<i>Kashishiri</i>	0	0	62	0	0	62	
	<i>Malgousse</i>	0	0	5,177	0	0	5,177	
	<i>Kavungwe</i>	0	0	20	0	0	20	
	<i>Kishasha</i>	0	0	428	0	0	428	
	<i>Musombosomb o</i>	0	0	70	0	0	70	
	<i>Limnathenses alba</i>	0	0	552	0	0	552	
	<i>Jacaranda</i>	0	0	969	0	0	969	
	<i>Prunus</i>	0	0	286	160	0	446	
	<i>Ficus Thonningii</i>	0	0	0	1,768	0	1,768	
	<i>Persea americana</i>	160	93	7,798	552	0	8,603	
	<i>Tamarandus indica</i>	0	0	709	0	0	709	
	<i>Cadrela Odorata</i>	0	100	6,654	170	0	6,924	
	<i>Cytrus</i>	68	0	17,551	0	0	17,619	
	<i>Mangifera indica</i>	0	10	3,337	23	0	3,370	
	<b>Sub-total</b>		<b>54,326</b>	<b>53,984</b>	<b>77,802</b>	<b>4,835</b>	<b>0</b>	<b>190,947</b>
<b>Reforestation</b>	<i>Acacia</i>	0	86,331	17,440	92	0	103,863	64.91
	<i>Bambousa</i>	0	907	391	0	0	1,298	3.25
	<i>Cassia</i>	23,831	656	24,574	1,372	0	50,433	31.52
	<i>Eucalyptus</i>	1,528	2,997	429,465	63,714	0	497,704	311.07
	<i>Callitris endlicheri</i>	0	0	10,584	1,479	0	12,063	7.54
	<i>Cupressus lusitanica</i>	0	0	54,232	8,445	0	62,677	39.17
	<i>Delonix regea</i>	0	0	4,158	0	0	4,158	2.60
	<i>Casuarina equisetifolia</i>	0	0	17,618	0	0	17,618	11.01
	<i>Grevillea</i>	0	150	99,121	30,974	0	130,245	81.40
	<i>Maesopsis</i>	214	12	26,511	3,074	0	29,811	18.63
	<i>Terminalia</i>	0	1,733	15,866	845	0	18,444	11.53
	<b>Sub-total</b>		<b>25,573</b>	<b>92,786</b>	<b>699,960</b>	<b>109,995</b>	<b>0</b>	<b>118,359</b>
<b>TOTAL</b>		<b>79,899</b>	<b>146,770</b>	<b>777,762</b>	<b>114,830</b>	<b>0</b>	<b>1,119,261</b>	

## ANNEX IV STAKEHOLDER INTERVIEWS

Each interview started with a brief introduction and enquiry about the interviewee's affiliation with the project. The general structure of the following discussions centred around questions to determine the interviewee's interpretation of the objectives of the project, examples of good practices and successes, as well as challenges and possible solutions. Interviewees were also given opportunity to add any additional remarks they would consider relevant. Each interview took on average about 60-75 minutes.

<p><b>Pacifique NTABAZA, Monitoring &amp; Evaluation Officer, Acting Project Manager</b> PMU staff member since the start of the DRC Component in October 2010</p>
<p><b>A) Background</b></p> <ul style="list-style-type: none"> <li>• Building capacity of local communities to sustainably manage the land is crucial because there is significant erosion in the catchment, which affects the lake, the fish, and the overall Lake Tanganyika ecosystem. Improved agricultural practices, regeneration, and reforestation are needed to put a halt to erosion.</li> <li>• Lack of awareness was an initial challenge. The local population and authorities were not sufficiently aware of the solutions to the problems associated with unsustainable land management.</li> <li>• Demographic challenges complicate the situation. People need wood for cooking, and other purposes. Therefore the project also promotes energy efficient alternatives, such as improved stoves.</li> <li>• The NRM capacity of local government requires enhancement, and awareness needed to be raised among local authorities about the importance and management of nurseries.</li> </ul>
<p><b>B) Good Practices and Successes</b></p> <ul style="list-style-type: none"> <li>• The awareness of the local community was successfully raised and they now understand the relationship between the catchment, erosion and the lake itself.</li> <li>• Before the UNDP-GEF Project there was a project implemented by another organization that aimed on promoting reforestation. Lessons were learnt from that project, which was unsuccessful as it did not sufficiently involve the local communities. The current project focused on working at the basis (bottom-up), together with local communities. This ensured buy-in and project ownership at the local community level.</li> <li>• The project taught people how to propagate adequate species for sustainable agriculture, agroforestry, and reforestation, including local species. The project taught the local leaders, and they subsequently taught their local communities.</li> <li>• Local language was used during the training, and methods were adapted to the local needs.</li> <li>• Key stakeholders were identified at the beginning of the project, and sufficiently informed and involved in project implementation.</li> <li>• Local communities were involved from the beginning. Initially there expectations were quite low – the project exceeded the expectations to some extent, for instance because the stakeholders expected that they would have to pay for trees from nurseries. The project provided the nursery specimens for free, which helped in encouraging people to participate.</li> <li>• Not all agricultural innovations that the project promoted were immediately accepted by the stakeholders. Planting local tree species poses a problem with ownership. The project helped with awareness raising to get the people to agree that even if it's a local species it still belongs to the person who planted it.</li> <li>• Contour barriers are an example of good practice to control soil erosion, But they are difficult to implement because it requires a lot of knowledge and is labour intensive. The traditional way of putting stones in vertical lines is easier for people to do. But there are farmers who have organized themselves into a group traditionally called "<i>mulali</i>" so that they can work together to establish the contours. But it is still quite limited. The farmers have seen in the demonstration plots how successful this can be, but it will take time for them to start implementing this on a large scale.</li> </ul>

### **C) Lessons Learnt and Future Recommendations**

- The fact that the planting of seedlings is dependent on the season needs to be taken into account during project planning and budgeting. The project initially did not sufficiently take seasons into account, partly because of a delay in the availability of funds. This led to a significant loss of seedlings during the initial project stages. The team subsequently made an effort to ensure that seedlings could be planted during the appropriate season.
- The project was shorted to two years, and there was enough funding. If the project would have taken 4-5 years (which would have been better for achieving measurable results in improving vegetation cover and reducing erosion rates) the budget probably would not have been sufficient.
- The steep terrain without roads, and the distances makes fieldwork difficult, to get to one of the sites it takes 6 hours. The team made an effort to visit the project sites in the catchment as frequently as possible, but it would have been better to have more staff, so that there could be more presence in the field.
- At the local level there was sufficient communication, but it was more difficult to provide sufficient communication at the national level.
- The local government needs continued institutional capacity building and logistic support to ensure sustainability of activities that were started by the project.
- To ensure sustainability its very important to establish/support a group that can continue the project activities after its finalization. These groups should ideally be involved since the beginning of the project.
- PMU's should receive training on the UNDP-GEF M&E framework at the start of the project, so that its clear which inputs are expects. There should also be feedback from the donor to the teams in the field.
- Substantial positive results were achieved, especially given the short time frame and it would be good for future initiatives to capitalize on the achievements of the present project.

### **Busomere NGENGE, Forester, Interim Agroforestry Specialist**

PMU staff member since February 2011

#### **A) Background**

- One of the key activities of the project is to take measures against erosion through sustainable agricultural practices, which is important because erosion ends up in the lake and this affects the fish.
- The project also aims to improve local livelihoods. The main beneficiaries are the local farmers, especially also local women. At the moment it is very difficult to find wood for cooking. The soil has lost its fertility. There is a lot of poverty.

#### **B) Good Practices and Successes**

- Some small patches of forest in the Uvira region are protected by the local communities, because they use these for harvesting of specific products (e.g. mushrooms). The project mapped local forested areas, and initiated stakeholder discussions, resulting in 167 hectare of forest now being left to regenerate naturally and protected by the local communities.
- Reforestation has taken place on river banks, 25 nurseries were established, and almost 1 million seedlings were planted in 2011.
- The project worked together with the local community (bottom-up), and they understood that the project is there for them so there was a lot of buy-in.
- The most important stakeholders are the farmers. The project was very successful in communication and capacity building of these stakeholders. Awareness was raised and 90 people were trained in managing nurseries.
- The project showed the stakeholders in the field how the best practices can be done. So not just talking about it, but actually demonstrating it.
- The project established seven sites of one hectare each, to demonstrate good agricultural practices

using contour barriers and diversification of agricultural species. The contour barriers were built by groups of women, who worked together (traditionally called the “mulale” practice) but this takes time. The results in the demonstration sites are very clear, but it will take time for this to be copied at a larger scale.

- Initially, people were stealing trees from each other, for instance bamboo (used for erosion control). By engaging people in discussions the project tried to discourage stealing – but it is very difficult especially higher in the catchment where there is less control.
- An increasing number of people is aware of the usefulness of diverse agroforestry species. Before the project intervention, the majority of people in the area mostly planted Acacia and Senna. Now they are planting mandarins, Grevillea, bamboo, “*Mugete*” (*Haegenia abyssinica*, red wood, good wood for construction), amongst others.
- Forest fires influence sustainable agriculture, reforestation and regeneration efforts. Farmers think that this helps increase fertility. The project noticed that this was a challenge for achieving its objectives of sustainable catchment management, and sensitized the local population about the negative effects of forest fires. The project also offered alternatives for fertilization, such as herbs.

### **C) Lessons Learnt and Future Recommendations**

- The problems with forest fires in the region are very substantial. Although the project made an effort to sensitize the local population about the negative effects of forest fires, the problem is so wide-spread that more awareness raising and action is needed in the future in order to have a significant effect.
- There has been significant capacity building of stakeholders by the project. But at the local government level, more capacity building is needed, especially training for sustainable NRM.
- Given the capacity needs, it is important to also provide training of local staff to enable them to improve their job-related skills.
- Activities related to providing alternative energy sources should be expanded, especially given the impact that deforestation for fuel wood has on the catchment. This was not sufficiently provided for in the project budget.
- A project like this should be planned for 5 years, adequately take into account the different seasons for planting, and ensure sufficient funding.

### **Gilda MAVINGA, Community Outreach Officer**

PMU staff member since October 2010

### **A) Background**

- Capacity building of the local government and communities is of crucial importance for the protection of the catchment of Lake Tanganyika.
- Practical actions are needed to protect the catchment. The local people in the Uvira region are the primary stakeholders of the project. Their livelihood options need to be improved, as there is extreme poverty which affects the environment.

### **B) Good Practices and Successes**

- Increased diversity of species are used for agriculture and agroforestry, and also using local species (before it was mostly eucalyptus). This is important because each species has its own qualities, like fruit, medical qualities, wood. So the diversity helps to support the livelihoods of local people. The project helped to bring back the knowledge about the importance of diversity.
- The project organized multiple discussions and workshops with the local stakeholders to sensitize them and explain why using a diversity of plants and trees is important. This also helped to integrate existing local knowledge into project activities.
- Promoting best practices against erosion, for instance using contour terraces instead of the traditional methods such as creating vertical barriers of rocks (*luongolo*). This was successful because the local community used group work (*mulale*) to help build the terraces.
- Each demonstration site worked with 25 agriculturists (the majority women), and they are spreading the

message further – people are coming from outside the catchment to ask for information about the project (including CARITAS, ADRA, Women Refugee Council, OCHA).

- Planting trees in agricultural plots, to increase the fertility and also produce fruits (this is especially interesting for women, because they use the fruits – the men are more interested in wood for construction).
- The project contributes its success partly because it provided seeds for free to the farmers. This is important because the stakeholders didn't have sufficient resources to buy these seeds themselves, so this way they could participate in improved catchment management without sacrificing the few resources that they have available to provide for their own livelihoods.
- The project successfully worked together with a group of stakeholders to create improved, energy efficient stoves. The majority of the more traditional stoves (*jiko*'s) uses a lot of wood. The improved stove is called the *Jiko Linda Mazingira* (stove to protect the environment). The new stove is inspired by similar system that are used in Goma and Bujumbura.
- Quite a lot of agricultural plots do not belong to the farmers themselves (especially the women). Therefore, the project also made an effort to raise awareness of the owners of the plots about the importance of planting a diversity of trees.
- Some of the project sites are very far, it takes 6 hours of walking to get to the most remote areas. But it was important to include these distant sites, because satellite images indicated that this is a source of erosion.
- The project also organized specific activities for women, a workshop of two days was organized during international Women Day.
- A workshop was organized with 30 representatives of women associations on how to use the *jiko*. A second workshop was organized on how to make the *jiko*, together with SAFAU. They are now producing the *jiko* themselves now and selling them with a very marginal profit. The prices are purposely kept as low as possible, to encourage people to buy them. The old system uses one bag of charcoal for one month, and the new system can last two or three months with one bag of charcoal. One bag of charcoal costs USD 30 (30.000 FC).
- The project also approached indirect beneficiaries, such as professors and students. Environmental education was very successful, especially in primary and secondary schools. The project first organized a workshop with the director of the schools (15) to determine the current curricula, to determine how environmental education can best be integrated. An environmental education manual was developed for teachers. The project planted trees in school yards together with students. Each student received a certificate for successfully participating the environmental education programme of the UNDP-GEF Project, and this activity was very enthusiastically received by the schools.
- The project implemented an outreach and awareness raising programme, which was especially successful at the grassroots level (farmers).
- Communication methods were adapted to the local situation. A diversity of methods was used, e.g. printed materials, T-shirts, theatre plays, songs, radio programmes, etc..
- Using the right language is important, Kiswahili and local languages were adopted to reach stakeholders.
- The project also worked with RTNC to broadcast environmental awareness programmes. RTNC will continue the environmental outreach programme even after project closure. The programme is called *Ukingo wa Mazingira* (Protection of the Environment), and is broadcasted two times 30 minutes per week.
- The success of the communication strategy is also illustrated by the fact that people sometimes call the project staff for advise on environmental issues and sustainable agriculture and agroforestry.
- The project engaged local NGO's in its activities. One example is ACODI, a local NGO which was involved in taking action against pollution. They supported the project with theatre productions, cleaning of the street, public discussions about the Green Economy. Another example is the collaboration with Terre des Jeunes RDC for campaigns.
- SYMUF was formed with the aim to strengthen communication efforts in the area, and its members were actively involved with outreach activities and participated during World Environment Day and other events organized by the project.
- The project not just handed out seeds, but trained people as well. This type of capacity building has hardly been done in this region, where the majority of organizations focus on humanitarian support.

- In theory, the stakeholders should now be capable of continuing the actions that were started by the project. Consortia and associations have been formed such as CIV, SAFAU, and SYMUF. This should help to facilitate sustainability.

### C) Lessons Learnt and Future Recommendations

- Erosion control measures such as contour terraces are very successful, but they are also very labor intensive. The reason why people prefer traditional methods such as *luongolo* is that they are less labor intensive and require less technical skills. Because there is such extreme poverty in the area, and its difficult for people to get enough food and calories, so its very hard for them to do extra work. They were encouraged by the project, and they saw with their own eyes how much difference the contour terraces can make for their agriculture, so they might try themselves. But it will be very difficult for them without extra support.
- The project identified a wide range of stakeholders that were subsequently targeted for various interventions, including representatives of the national and local authorities. The traditional chief (*mwami*) participated in workshops, was active in the campaign against forest fires, and also actively participated in field visit. Efforts were also made to involve the Uvira Territory authorities in project activities. This was successful, however, since they have very little capacity it is unlikely that the national Government will actively engage itself in increased environmental protection and sustainable catchment management activities unless external support is offered.
- Due to the distance to some of the field sites, not all stakeholders could be equally involved in communication and outreach activities. It would have been helpful to have had more staff, so that distant sites could be visited more often.
- Livestock keepers were initially not identified as key stakeholder and therefore not included in the project's capacity building and training activities, but they do have an effect on sustainable agriculture and often maintain agricultural plots as well.  
Security issues are a real challenge in this region. Soldiers destroyed one of the nurseries of the project, and they also cut down trees to use them for firewood and to sell them.
- Stakeholders benefitted greatly from the project through capacity building and awareness raising. It appears that the vast majority of the beneficiaries are interested in continuing the activities that were started by the project. Although the end date of the project was clearly communicated to them, stakeholders are insisting that the project should continue longer. Although their capacity has been built, they are not confident that they are sufficiently capable of continuing some of the good land management practices like contour terracing and nurseries, because they don't have enough financial resources.
- It would be really good if the activities started by the project could continue for 3-4 more years to get a greater impact and better ensure sustainability.
- Availability of funds needs to be on time, because delays hamper progress of the project.
- It is very encouraging to have visits of colleagues from the PCU and from people who have interest in the project. It would be beneficial if there could be more knowledge exchange with PMU's in the other riparian countries and at the regional level.
- The project supported local NGO's and associations to help continue some of the activities in the future. But it is also important that the government takes up its role in sustainable management of the catchment basin.

### Edmond LENGHE LWEGELEZA III, Mwami of the Chiefdom of the Bavira

Involved with the project since October 2010

#### A) Background

- The hills around Uvira are denuded, and reforestation is necessary. Protection of the catchment is urgent, because there is excessive erosion. During the rainy season there are landslides, and houses are damaged.
- Support is needed for the sustainable development of the population of Uvira.

## B) Good Practices and Successes

- The most positive aspect of the project is that it puts the people first.
- The project made an exceptional difference in involving the population, including the traditional chiefs.
- WWF's approach is different from most humanitarian and development agencies that are active in Uvira. This project is the first intervention that makes an extensive effort to take into account the opinion of the traditional authorities and the people of Uvira.
- The project really helped with the sensitization of the local population about the environment.
- Awareness was raised, especially also of young people. This even helped in reducing crime because people were involved in work for the project.
- The project encouraged the local population to take charge themselves, by increasing their knowledge, giving them tools to work with, and supporting them.
- What was also very positive is that the project collaborated with the local population in a very open and transparent way. The project set a very encouraging example of good governance.

## C) Lessons Learnt and Future Recommendations

- Nurseries were successfully established, and they provided a positive example of good practice. But it is unlikely that the local people can continue with the management of the nurseries after the project closes, because they don't have sufficient finances. There is extreme poverty in this region, which is partly also the result of the war and ongoing security challenges. It is relatively expensive to establish and manage a nursery, and the majority of the people think they would not be able to afford establishing even a small nursery. It is actually not entirely clear how expensive it would be to start or maintain a nursery. It would be useful if the project could give some estimates of how much it would cost, so that the people have a realistic idea.
- Local leaders such as the Mwami can help to encourage sustainable catchment management. But there is not enough confidence that the local farmer are sufficiently capable to continue all the actions after the project closes. Especially helping the farmers change from using traditional *luhongolo* methods to contour terracing will require continued support from technical experts.
- The actions of the project have been received very positively, but the duration is too short. For sustainability purposes, it would be recommendable to continue support for at least some of the activities (nurseries, contour terracing). Perhaps the lessons learnt can be used by another project to continue the activities.
- Because the environmental and developmental challenges in this region are of such a large magnitude, it is important that the project activities are also replicated in other Districts, and not just Uvira. The activities should be done at a much larger scale, and efforts need to be made to ensure sufficient funding.
- The project sites are far apart and some of them are difficult to reach. In order to gain time, it would be useful to have adequate means of transport available to the staff and beneficiaries of the project. For future projects, perhaps it would be recommendable to budget some motors for this purpose.
- To help ensure sustainability of the catchment management activities that were started by the project, perhaps it would be an idea to establish a dedicated platform for local organizations. The platform should include members of the relevant authorities. It could also function as a mechanism that monitors the use of funds, to ensure that the money is invested in a good way.

**Daniel NZYUKO, Interim Programme Coordinator African Rift Lakes Programme, WWF**

Involvement with the project since July 2010

## A) Background

- The main purpose of the project is the demonstration of sustainable catchment management practices. Deliberate efforts were made in the design of the project activities to ensure participation of local stakeholders. The project aimed at facilitating local communities to engage in the process through a participatory approach. The overall goal is that local communities see the value of the activities, are

able to identify with the solutions/innovations, and subsequently adopt these innovative approaches.

- Another important goal of the project is to strengthen the capacity of local institutions to be able to engage in catchment management.

## **B) Good Practices and Successes**

- One of the advantages at the start of the project was that WWF is an institution that has long-term interests which are fully aligned with the objectives of the project. Lessons learnt from other projects implemented by WWF in the region were successfully integrated into the design and approach of the activities for the UNDP-GEF Project. The team in Uvira could count on support and close follow-up from WWF offices in Goma and Nairobi.
- The project management unit is composed of Congolese nationals, bringing together people from different regions of the country.
- The project team made a significant effort to obtain an in-depth understanding of the local context issues. A focused study was done to understand relevant local situation and adapt the project activities accordingly. This also counted for environmental awareness and education activities, which were formulated according to the local needs.
- The project was initially designed to be implemented over four years, but in reality only two years for implementation, due to delays at the PCU level. The work plan was specifically adapted, and activities prioritized and planned in detail, with clear milestones. Once the PMU was established they could start work immediately.
- The project engaged directly with local communities, through established community structures and by taking into account traditional leadership structures. Stakeholders were actively engaged in decision-making processes as well as the joint-implementation of project activities. This participatory approach contributed significantly to the success of the project.
- One of the strengths of the project is that the activities were fully informed by scientific approaches for the purpose of demonstrating impact and planning. This was made possible by a successful collaboration between WWF and ICRAF, who complemented each other in terms of knowledge, capacity and experience on the ground.
- Agroforestry technologies and innovations were identified using a participatory approach, in collaboration with ICRAF. The close engagement of the ICRAF consultant with the local communities, as well as the scientific expertise and technical capacity that this institution represents contributed greatly to the success of the catchment management interventions. Local knowledge of tree species, use of agroforestry products, markets, etc. was integrated with modern scientific knowledge by ICRAF.
- When the project was designed, the goal was to implement catchment management at a large scale. Analysis of catchment characteristics by ICRAF (using satellite data), demonstrated that actions higher up the catchment were necessary to demonstrate results lower in the catchments. The project therefore also engaged stakeholders from the higher plateau, whom are usually overlooked by projects/NGO activities.
- The scope of the project activities was prioritized at the start of the project. In order to have a demonstrable impact, sub-catchments were identified and criteria developed to prioritize catchments. Three sub-catchments were identified, so that resources could be focused and impacts demonstrated and measureable at level upstream and downstream. This also helped with the planning.
- One of the goals of the project was also to promote energy efficient technologies. Local stakeholders were actively involved in testing and validating of improved stoves, which increased their feeling of ownership. Gender aspects were taken into account, and women played an important role in the selection of the improved stoves. The group also decided the name of the new stove.
- The project analyzed the costs of the production of the improved stove, and concluded that it is more cost-effective than the traditional stoves.
- Five association that were involved in the process of improving and promoting the stoves. They formed a consortium, and are now doing production together.
- The people who participated clearly took pride in the project activities, and they took personal responsibility. This was especially also effective in the campaign against rampant forest fires. Local leaders were very actively engaged in the campaign. The project is setting a true example in that respect.

- Stakeholders who collaborated with the project followed an agreed set of conditions that was stipulated in a written contractual agreement. There was follow up to ensure they would honor their commitment.
- Stakeholders received training on tree planting, and were then asked to follow technical guidelines. The local chief subsequently ensured that the group would comply with the technical guidelines.
- The team was also successful in using sensitization to make people understand the purpose of the project. Furthermore, the Government was mainstreamed in outreach programs. Government representatives were actively engaged in awareness and outreach activities.

### **C) Lessons Learnt and Future Recommendations**

- The project was successful in clearly identifying key stakeholders were identified clearly, however, technical ministries at the Provincial level (Agriculture, Environment, Water), which represent important links with the national Government project were not fully brought onboard due to PMU leadership issues. After some of these challenges were identified, the team made increased efforts to improve communication between project and national Government.
- When the project was designed, it was assumed that local Government extension systems would pick up the innovations and mainstream them in their work plans. However, extension agencies are not present in the region. Furthermore, extension efforts failed because local communities initially thought that the Government wanted to claim the land on which they were planting trees. In the end, the project itself functioned as extension agency, and subsequently also provided opportunity for the Government as an extension agency.
- The project significantly helped to build capacity for sustainable catchment management. Community institutions were developed and are motivated to push the agenda forward. For instance, CIF established an office and they themselves are paying the rent for the office space. However, it is not certain if the increased capacity of the community will lead to continuation of the project's activities. The local market might be too weak because of the post-conflict scenario. Humanitarian support is mainly focusing on short-term relief. Traditional community structures can help to enhance sustainability. One solution might be to offer a forum to local chiefs so that they can actively take up the role of communicating about the importance of taking care of the environment.
- The promotion of energy-efficient alternatives started relatively late because other activities had to be prioritized. Although the strategy to improve the stoves was very successful, and the consortium of local associations continues to create and sell the stoves, this activity is hampered because of a lack of time to help with some of the sustainability aspects. For instance, the consortium will need to develop a clear strategy to market the improved stoves and ensure that the profits can be reinvested in creating new stoves. Unfortunately it is not possible to facilitate the development of a marketing strategy before the project closes.
- The timing during which project funding became available for field activities was affected by precaution measures to manage financial risks. This is inevitable when working in this challenging region, but unfortunately had an impact on the timing of seedling-planting. Delays in availability of funding need to be taken into account during planning stages.

### **Tina SHAGAYO, farmer and involved in project outreach activities**

Involved with the project since October 2011

#### **A) Background**

- The project is important because it helps the people to improve their livelihoods so that they have a chance to move away from poverty.
- Our agricultural plots have lost fertility. The project teaches us how to cultivate our land better, how to stop erosion, and how to improve the fertility of the land.

#### **B) Good Practices and Successes**

- The project worked together very well with the local community, and we were well informed about their activities.
- The project trained people and gave us knowledge, so that we can do the work ourselves, and we are not dependent on others.
- We (the female farmers who are involved in the project) now also teach other groups, and we make them aware of the environmental problems and the solutions that we have.
- Initially there were only 25 people in our group who were working with the project. But we (the women) also informed other people who now want to be involved in the project. There are now 50 other women who want to do the same thing.
- The project helped to change the agricultural practices that we were doing in the past. In the past, we were making small hills with rocks, and now we make long lines that follow the contours of the hills. It helps with stopping the erosion.
- Making the contours is a lot of work, but when we work together as *mulali*, we can do it.
- They learnt about trees that can help to fertilize the land, such as the *Kilondolondo (Ficus thoningii)*.

### C) Lessons Learnt and Future Recommendations

- Its possible for the local groups to continue with the contour terracing after the project. We have gained knowledge, and we can work together as *mulali*. But at the same time, we feel that we still need more technical expertise so that we can continue learning and improve. We are very keen to learn more about new practices for agriculture.
- It is not easy for us, because it is very hard work. The people who were involved in the project received a small fee for being involved. Without that we would not have been able to participate, because we need money to buy food, and when we work with the project we cannot do our normal work to earn money. So to continue we need to find funding.
- There was only little time, but these activities need more time. And the planting seasons need to be taken into account.
- The women can take more responsibly than we have had so far. We have knowledge, and we can work hard.
- The beneficiaries are extremely positive about the way the activities were implemented, so it would be good if the activities that the project started could be continued.

#### Resa BAZIBWA, farmer

Involved with the project since December 2011

#### Shem MBONGO TUMANI, Agronomist of CIV

Involved with the project since May 2012

#### Kungwe OBED, Agronomist, Coordinator COOJAEKA

Involved with the project since October 2010

#### Basil WA PAWENGE BULAMBO, Agronomist OSBEDEC

Involved with the project since October 2010

### A) Background

- The hills around Uvira are very deforested. Erosion causes many problems in this region, including landslides that destroy houses.
- The deforestation has increased significantly as a result of the war, when many people fled to Uvira.
- Forest fires were rampant, and this is an important cause of deforestation and erosion.
- There is an enormous need to help stop the environmental destruction.

### B) Good Practices and Successes

- Stakeholders were integrated in the project activities, and the project team listened to the concerns and ideas of the beneficiaries. The stakeholders were involved since the beginning, and well-informed so their expectations were realistic. The team visited the field sites regularly. If there was a problem, they

called Ngenge (the project Forestry Expert) and he was always available.

- We benefitted from capacity building and learning new techniques. Our knowledge has increased a lot. We learnt to use local species that are well-adapted to the local environment. We learnt to use new species in our agricultural plots. Before only a few species were used for agroforestry like cactus, grevillia, cassia, eucalyptus. Now we are using a larger diversity.
- Together we planted thousands of seeds, included the native ficus Kilondolo.
- We are planting the seedlings to protect the slopes. The local community is very interested in these species, because there are too many problems related to erosion.
- Before the project, we used to plant tree seedlings directly in the soil, but now we raise them in nurseries. We also learnt how to do tree grafting.
- The demonstration plots were very successful. New techniques were used like establishing seed beds, and gabions to help stop erosion.
- We also learnt the new technique of contour terracing. We think it's possible to continue with the terraces, but it is a lot of work.
- The seedlings are distributed for free by the project to help protect the environment. We have gained a lot of knowledge and we are confident that in the future CIV can continue the activities that were started by the project. Every member of the association can contribute a little bit of funding so that we can continue to purchase seedlings in the future.

### **C) Lessons Learnt and Future Recommendations**

- It is important to provide training so that people can increase their capacity to manage nurseries. This should include not only technical aspects like selection of appropriate species, but also financial management and marketing. There should also be a larger budget to support the associations who are involved, for reforestation activities and functioning of their office. Without an office and without a budget to pay staff, it is difficult to motivate people to continue working. Therefore it is relevant that continued technical and financial support is provided to local organizations.
- The duration of the project (2 years) is too short, and it did not sufficiently take into account the rainy seasons. The impacts could have been significantly larger if the project could have been active for at least 4 or 5 years, and if it would have taken seasonal aspects into account from the beginning.
- The project made very positive contributions, but the scale is too small since the project only focused on specific areas in 3 sub-basins the Bavira region. The beneficiaries and stakeholders are very keen to continue the project activities. They now see the advantages of using appropriate tree and agricultural species, and techniques. They are keen to learn more, and increase the diversity of species even more (while avoiding potentially invasive species). There is still a lot of work left to do, because the scale of the environmental problems in this area is enormous.
- Two unforeseen problems were theft and goats. People who have not been involved in the project were stealing seedlings from the nurseries, and free-ranging goats ate seedlings that had just been planted. Increasing the scale of stakeholder involvement and awareness raising could help to prevent these challenges in the future (but this would also require increased funding).

#### **Joseph SONGOLO, Supervisor of jiko workshop**

Involved with the project since August 2012

#### **Christian MAKINDU, Adjunct Director of training, jiko workshop**

Involved with the project since August 2012

#### **Jean de la Croix WILONDA, President of SAFAU**

Involved with the project since June 2012

### **A) Background**

- Deforestation is a big problem in this area. A lot of the deforestation is caused because people need fuel for cooking, so they use wood or charcoal.
- Promoting fuel-efficient alternatives for cooking will help reduce deforestation.

## B) Good Practices and Successes

- The project helped produce an improved stove that keeps the fire going longer and consumes less wood, and this helps with the protection of the environment. It reduces the quantity of wood and charcoal that people need for cooking. It is a real innovation in this area. Normally people use 1 bag of charcoal per month, with the improved stove they use 1 bag for 2 months. This helps against deforestation, and will have a positive effect on the environment.
- Even the oven in which the stoves are baked is environmentally friendly. It uses grain leftovers that people would normally throw away. The oven is built in a more environmentally friendly way, with more insulation than the traditional ovens. Also the composition of the clay, and the press in which the stoves are molded are true innovations.
- Women played a key role in selecting the best stove, and naming it the *Jiko Linda Mazingira* (stove to protect the environment).
- The objective is that everyone in Uvira will have a *Jiko Linda*. Normally people sell a stove like this for USD 10, but we sell our improved stove for USD 3 so it is less expensive.
- The association also plays a role in awareness raising about the environment. They have a team of 30 people assigned to help with the awareness raising. They go from home to home, churches, schools.
- Five associations are included in SAFAU. The project helped in establishing and strengthening this synergy of associations. Now there are 60 people who have found work.
- The establishment of a synergy of associations that have their own workshop space lead to a collaboration with an NGO that uses part of the workshop space to produce mushrooms.
- The members of SAFAU think that it would be good if an increased amount of people would start producing the improved stove in Uvira. They encourage competition, because it is healthy and will lead to even more innovation.
- SAFAU managed to arrange a plot to establish the workshop, and borrow a pick-up truck when they need to transport materials or stoves. The members of SAFAU are characterized by their strong will to collaborate and to succeed. They take significant pride in their work, and in the fact that they have been able to manage many challenges themselves, without support from the project.
- Women are actively implicated in the activities and they are setting an example for other women. The men didn't think they were capable of doing hard and technically skilled labor but they proved that they are capable. There are currently 17 women and 13 men working at the SAFAU workshop.

## C) Lessons Learnt and Future Recommendations

- The *etoiliers* (people who produce the metal covers for the stoves) were not initially involved in the workshop, but they accepted to work together with the project on the basis of a fee. This cost was not initially foreseen, and has an effect on the total costs of producing the stove. Either the members of SAFAU have to learn how to produce the metal covers themselves, or the price of the stove will eventually have to increase in order to be sufficiently profitable.
- Although SAFAU is confident that they can be financially independent and continue their activities after the project ends, it would be beneficial if they could receive additional support for the following reasons:
  - 1) Instead of having one central workshop for all the associations that are part of SAFAU, it would be recommended to establish several additional small workshops closer to the home base of each association. Some of the members have to come from far, and this poses extra costs for transport, as well as security issues since they make long working days and sometimes travel in the dark, which is not safe.
  - 2) Mixing and kneading the clay by hand is very hard and fatiguing. This may seem trivial, but it burns a lot of calories, and people in this region often don't have sufficient means to properly feed themselves. It is possible for the SAFAU members to build a mechanical kneading device (*moulin*), but they estimate it would cost around USD 1.500 and they don't have sufficient savings for this.
  - 3) It would be beneficial for SAFAU to have an office where they could do their administration. This could also be used as a central point for marketing and sales (if on a good, visible or well-marked location in town).
  - 4) More training is needed to help build capacity for management, financial management, and marketing. SAFAU strives to become more professional and increase visibility, to do more promotion

and advertisement.

**Berger SANGO BENGA, President of CDC**

Involved with the project since March 2011

**Kasimba NYONGOLO, Secretary of CDC**

Involved with the project since 2010

**Saidi LUHINDA, agriculturist**

Involved with the project since 2010

**Jina TABU MA BANDIRO, member of CDC**

Involved with the project since March 2011

**A) Background**

- Armed groups higher up in the catchment cut down trees, and they contribute significantly to the deforestation rates in the region.
- There is too much erosion in this area. The project helps to change the agricultural practices and control erosion.

**B) Good Practices and Successes**

- We received training on sustainable agriculture, and how to implement erosion control measures. It changed the way we look at agriculture. We learnt how to use erosion control measures (horizontal versus vertical), this really helped increased productivity of the plots. Our plots are doing very well and we made significant progress. Our productivity has increased so it helps to reduce our hunger.
- Others came to see how we worked, and they were interested in continuing the same technique. We also used the same techniques in their plots, we gave them seedlings and taught them how to plant. There are at least 10 other farmers who started to do the same thing. And other people in the community also started planting trees.
- We learnt how to use different seeds, and take into account the right timing for planting.
- We supported natural reforestation. There was a workshop, and signs were put up to inform people. People were trained and understood that the trees are important, they will help to create a micro-climate, and protect against erosion. In the future we can use this forest for fire wood. This is organized at the community level. We are confident that this will continue positively. Some of the trees are already growing. The growth rate depends on the tree species. Because it is natural regeneration, it will take time. We don't know how long, but even if it takes 10 years, we are committed to protecting our community forest.
- One of the reasons why the project is successful is that they supported the field work and purchase of seedlings financially. Without this financial support, it would not have been possible to establish nurseries.
- The project team regularly came to visit the field, which was very positive.
- The members of CDC are confident that they can continue and expand the work the project has started, although it will be difficult because of financial and technical constraints.

**C) Lessons Learnt and Future Recommendations**

- The funding from the project has been delayed several times, which causes real problems. Last year, because project funding was received too late, trees were planted after the rainy season had finished and all plants died.
- It is important to respect the agricultural agenda, and take the seasons into account when planting seedlings.
- The project is too short. Trees take time to grow. It would have been better if the project could have been 4 or 5 years instead of 2. Also it would be good to expand the project area, because the scale of the environmental problems is very large.

<p><b>Herman MUSHOMBE, Supervisor for the Environment, Local Administration of the Uvira Territory, DRC Government</b> Involved with the project since October 2010</p>
<p><b>A) Background</b></p> <ul style="list-style-type: none"> <li>• Protection of Lake Tanganyika is needed. The hills are completely denuded. The war has made deforestation worse, because there has been increased cutting of trees resulting from an influx of refugees and armed rebels.</li> <li>• Awareness raising of the population is needed, and there is a need to plant trees.</li> </ul>
<p><b>B) Good Practices and Successes</b></p> <ul style="list-style-type: none"> <li>• The project planted more than 1 million seedlings</li> <li>• Awareness of the local population was raised about the environmental problems, including forest fires, which contribute to deforestation and erosion. It is necessary that the awareness raising continues every day, people need to love trees, they need to become holy to them.</li> <li>• The project helped to increase the area of protected forests, and allow natural regeneration. The protected areas are community forests. The community accepted to protect these forests. The protection is regulated at the Government level, and the communities have signed legal documents. Community members are only allowed to cut specific trees from the protected forest areas. There are agents who are doing surveys to ensure that the regulations are being followed. If people cut a tree from a protected area, they need to pay a special tax.</li> <li>• A very positive aspect of the project is that the team worked together with local associations (18 in total).</li> <li>• The project also worked sufficiently together with the local Government, they consulted us on key issues and we offered advise.</li> <li>• There was enough communication with the project. The project visited the sites frequently, and we also visited sites together. There agronomists of the project contacted us frequently for updates and advise.</li> </ul>
<p><b>C) Lessons Learnt and Future Recommendations</b></p> <ul style="list-style-type: none"> <li>• The duration of the project was too short, and it is uncertain if the local population will be capable of continuing the activities after the project. It would be recommendable to continue the activities with external support. Also the area needs to be expanded to the adjoining Territories. We need to plant 10 million trees, and stop sedimentation so that Lake Tanganyika can produce more fish.</li> <li>• The legislation and documentation for local forest protection needs to be improved.</li> </ul>

<p><b>NAME: Theophile Mulimbwa N'SIBULA, Scientific Director, CRH</b> Involved with the project since October 2010</p>
<p><b>A) Background</b></p> <ul style="list-style-type: none"> <li>• This area is characterized by extreme poverty and lack of employment, which is a main cause of the environmental degradation.</li> <li>• There are also armed groups who cut trees in order to sell them, which is a big problem and contributes to erosion.</li> <li>• Species that existed before are no longer here, for instance many trees, monkeys, birds.</li> <li>• Reduction of sediment transportation to the lake is needed, habitats that were destroyed by people need to be reconstructed, and biodiversity needs to be protected.</li> <li>• The rainy seasons seem to be changing patterns in this region, possibly as a result of global climate change. They used to be 9 months, but at the moment the rainy seasons only last 7 months.</li> </ul>
<p><b>B) Good Practices and Successes</b></p>

- The project established nurseries and showed farmers how to take care of their environment. Agroforestry techniques were used, people were taught which trees protect the soil, and how to mix trees with agriculture.
- The project actively implicated the local population.
- CRH played a role in raising awareness.

### **C) Lessons Learnt and Future Recommendations**

- The project was too short – it takes a lot more time to see the reduction of sedimentation.
- It is important to take socio-economic aspects into account, and try to find more alternatives for improving local livelihoods. For instance by developing agriculture, livestock keeping, aquaculture and beekeeping.
- CRH was not sufficiently implicated in the project. They were invited in workshops, but that was not sufficient. Based on the project documents, CRH is supposed to draw a catchment management plan, but this has not happened yet. CRH is also supposed to do monitoring of the management of the catchment basin.
- CRH is a Government institution that can play a key role in continuing activities to protect the catchment in the future, using lessons learnt from the project.
- Surveillance and control of land management activities is necessary for future sustainability.
- Continued sensitization of land users is needed, and people need to continuously be reminded about lessons learnt and using best practices.

### **NAME: Dr. Nshombo MUDERHWA, General Director, CRH-Uvira**

Involved with the project since the beginning. Also participated in the previous UNDP-GEF supported Lake Tanganyika Biodiversity Project, and involved in developing the DRC Component of the present UNDP-GEF Project on Lake Tanganyika.

### **A) Background**

- The project focuses on sustainable management of the Lake Tanganyika Basin, and in the DRC specifically the sub-basin near Uvira.
- There is extreme erosion and deforestation – the project came at the right moment.
- The aim is to build capacity and show to the population that they can also participate in environmental protection in an efficient way, especially the farmers (e.g. using agroforestry).
- The population was initially not sufficiently aware of the need to protect the environment.

### **B) Good Practices and Successes**

- The project had very clear objectives, and the WWF team made a real effort to work together with the local population. They were very cooperative. They went into the field several times, for multiple days in a row – they didn't stay in their offices.
- The WWF leadership from the main office in Nairobi was also very supportive.
- ICRAF played an important role in providing a scientific basis for the work. They made satellite maps of the sub-basin that are very useful. They helped tremendously with the selection of the sites and the seeds (including local tree species). It made the local population very proud that they rediscovered these species.
- During the opening workshop (inception workshop) of the project, people came from far and there were many discussions. In the end they all agreed about the project and the stakeholders, so that was very positive.
- Participation of the local population was very successful. Capacity was built and people benefitted greatly from the training provided. People were empowered, and they now understand that they can actually participate in sustainable environmental management.
- The biggest success was with the farmers. It is magnificent how they worked together to improve their knowledge. Farmers are now capable of implementing agroforestry themselves.
- People are confident that they can make a difference even with the locally available materials.

- Awareness was raised about forest fires and their impacts on the environment and erosion.
- The project actively involved the authorities.
- CRH was involved in providing training about the lake.
- The DRC NAP for implementation of the SAP for the Protection of Biodiversity and Sustainable Management of the Natural Resources in the Lake Tanganyika Basin was accepted by the Government in 2012. Sustainable catchment management is important component of this, and was also informed by results of the project.

### C) Lessons Learnt and Future Recommendations

- During the period that the project was implemented, the Uvira Territory was relatively quiet and the security situation was good compared to other times. That had a positive effect on the implementation of the project – if the security situation would have deteriorated, it would have been more difficult to work in the catchment. The security situation is a real problem in this region.
- The delays that were experienced with project payments are a problem, and this should be avoided in the future.
- The role of the PSC should be well defined and this needs to be understood at all levels.
- Dissemination of results should be done at a very wide level. A solution needs to be found for people who don't know how to read, as they form an important part of the local population that needs to be sensitized as well.
- CRH is a Government institution with a research mandate. The institute is in a good position to compliment the work of the project, and as such was supposed to be involved in drafting a Management Plan for the Uvira sub-catchment, as well as a Monitoring Programme.
- The project was originally intended to take 4 years instead of 2. If the project would have had 4 years, more visible results could have been expected in terms of reforestation and reduction in sedimentation.
- There should be a small fund for follow up, and for establishing sustainability mechanism at local level.
- The DRC NAP for Lake Tanganyika SAP implementation includes priority actions that are relevant to sustainable catchment management. It is important to ensure that the momentum built by the project is not lost, and the NAP doesn't disappear in a drawer. Perhaps UNDP or WWF finance some of the actions proposed in the NAP, which have the advantage that are already accepted at the national level and build on activities that were started by the project.
- It would be recommendable to establish a small committee to ensure sustainability and monitor the continuation of the activities. This committee should include representatives of the local government, the mwami, farmers, CRH, NGO's, etc.

**NAME: Simbotwe MWIYA, Regional Project Coordinator, UNDP-GEF Project** Involved with the project as PMU Manager in Zambia from December 2008 until October 2011, and subsequently as RPC at the Project Coordination Unit.

### A) Background

- The project promotes sustainable use of natural resources, and proper management of biodiversity. This is achieved through catchment management with specific interventions in agriculture and forestry management.
- Most areas in the Lake Tanganyika basin are mountainous, and the project offers a practical way to stop sedimentation in the area.

### B) Good Practices and Successes

- The DRC Component of the project has been very successful in its ability to motivate the community to see the need for positive changes in agricultural and tree planting practices.
- Stakeholders were adequately identified and involved in the project, and there was sufficient communication.
- The initiative of involving local associations and NGO's has been very successful.

- There was sufficient funding available for the DRC Component.
- The project is managed in a way to encourage communities through existing and new associations to be involved in the project and this will promote continuity.
- The experience of WWF in community initiatives has been very helpful in implementing the DRC Component.
- The project built enough capacity and left behind structures to ensure that activities can continue after the project terminates. Training was provided on using a diversity of tree species for agroforestry purposes, constructing contour terraces to control erosion, and using energy efficient technologies. People who are working with the nurseries are now starting to generate income for themselves.

### **C) Lessons Learnt and Future Recommendations**

- The ToR for the NSC were adequate, but their interpretation was problematic. It would have been good if there would have been sessions during the Inception Workshop to discuss the ToR and their implementation, as well as the roles of the various stakeholders.
- There were miscommunications at the national and regional level. This was solved with support of all the partners involved.
- The project has demonstrated that catchment management can be achieved through interventions in agroforestry and agriculture. It would be recommended to involve an organization such as WWF again for future interventions – they have significant experience in the region and are an independent organization. Within the current thematic area there is still a lot room for funding proposals on catchment management interventions in forestry and agriculture. Local associations and NGOs should also be involved in future interventions.
- To ensure future sustainability it would be recommendable to link up programs with normal government programming, and Government funding. The DRC Government could show donors what they learnt from project implementation, and then ask for additional funding.
- Setting up a revolving fund might be an idea for future sustainability. Perhaps the UNDP Small Grants Programme could be linked to the Uvira region. An option could also be for WWF to draft a proposal for establishing a revolving fund to support natural resources based interventions. In Zambia the project started a revolving fund with USD 300,000. In DRC a larger area is covered by the project in comparison with Zambia, and perhaps a revolving fund could be started with USD 500,000.

### **Dr. Henry Mwima, Executive Director, LTA**

Administratively involved since April 2007, practically involved as LTA ED since January 2009

### **A) Background**

- The project focuses on sustainable catchment management through capacity building, supporting community institutions, agroforestry and energy saving aspects.
- The DRC Component offers a challenging situation for project interventions, because of its difficult socio-economic, environmental and security situation.

### **B) Good Practices and Successes**

- Despite the challenges the project managed to book successes, partly also due to the involvement of WWF and their experiences in grassroots level collaborations. Many local associations were involved in the implementation of the project. This is also important according to the LTA Convention.
- Stakeholders were well defined, and adequately involved. The results of the MTE also pointed to that.
- The project made positive efforts in strengthening the capacity of a broad range of stakeholders, institutions, Government representatives, farmers, etc. ICRAF should be credited for playing an important role in supporting agroforestry training.

### **C) Lessons Learnt and Future Recommendations**

- The role of NSC, their ToR as well as the implementation of the ToR should have been discussed at an early stage. This could have been addressed as part of the second CoM in April 2008, when a decision was made that the NSC would play a role in coordinating the project. This should have picked up during the Inception Workshop. The AfDB Project and PMU collaboration should also have been addressed at that stage.
- There was insufficient collaboration between PMU and NCU. This was partly related to the difficulty in appreciating the need to work together. It was also due to the fact that this need for collaboration was not emphasized in the ToR, and did not come out clearly during the Inception Workshop.
- It would have been recommendable to implement an annual performance review meeting for the PMU and NCU, so that people can come together and supervisors of projects can share ideas. This way, collaboration between the two complimentary projects could be tied to key activities.
- Sediment load assessment was part of the DRC Component. Participatory data collection took place after training by ICRAF. However, the PMU was supposed to ensure that CRH was involved in the participatory data collection, and this does not seem to have happened. There should have been better collaboration between CRH and the PMU.
- The complexity of the project design and the reporting system caused challenges for implementation and communication. Beneficiaries need to be sufficiently aware of their roles, and there should have been briefings about the role that the national Government should play. The project design should have made more efforts to ensure that the relevant partners are sufficiently informed about the role they are expected to play in project implementation.
- The linkages between the four national Components and the PCU are grey areas in the project design. The role of the PCU should also be more clearly articulated in the project document. There should have been more explanation about who is supposed to do what.
- Linkages with beneficiaries such as LTA and the four riparian countries should have been more clearly described in the project document. The tasks and obligations should be clearly defined.
- Extensive efforts should be made to maintain positive working relationships so that the progress of the project is not interrupted, which is in the best interest of everybody.
- The project has a responsibility to ensure that there is sufficient briefing to the relevant components in the Government. There should be sufficient briefings and communications to relevant beneficiaries in the LTA and Government. These interactions should be clearly documented, also because there can be high turnover in some institutions.
- There should be more publicity by way of sharing lessons learnt beyond just the immediate beneficiaries, so that people can know what is happening and what the project has done.
- Developing capacities is crucial for sustainability so there will be a multiplying effect. The Government should be encouraged to take up some responsibilities as value adding to the capacity that has been developed.
- There should be a clear exit strategy before the project comes to an end, so that the continued commitment of beneficiaries can be secured. As part of the exit strategy, there should be an assessment of the capability of the various stakeholders to take up some responsibilities. The final evaluation of the project should also assess how beneficiaries have begun to take up responsibility.

**Dr. Geoffrey HOWARD, Global Coordinator Invasive Species Initiative, IUCN**

Involved with the project since April 2010.

**A) Background**

- The main objective of the IUCN involvement in the project is to establish whether there are alien species in/around the lake that could become a threat to biodiversity and its utilization.

**B) Good Practices and Successes**

- As much as possible information was collected in and around the lake to establish the presence of invasive alien species. Using knowledge about the habitats in the lake basin, and characteristics of alien species, the team was also able to predict possible future biological invasions.

- Awareness raising was done through regional workshops that included participants from relevant institutions in the DRC, as well as through dissemination of a series of informative documents, leaflets and brochures.
- Based on the inventories, a programme was designed to monitor increases or decreases of biological invasions in the future. This programme was developed as an integral part of the LTRIEMP, and includes a list of possible national, regional and international partners for the monitoring process.

### C) Lessons Learnt and Future Recommendations

- There is no clear connection between the regulatory authorities and the LTA. The LT Convention includes terms that are relevant to biodiversity, invasive species, catchment management etc., but without clear connections with the regulatory authorities in each country it is difficult to encourage enforcement of relevant policies and regulations.
- It would be recommendable to continue to monitor alien invasive plants that are riparian to the lake and rivers. They are significantly diverse in species and wide in distribution, and form a definite future threat to biodiversity, aquatic ecosystems, and agriculture.
- Better collaboration between IUCN, ICRAF and the PMU could have helped to avoid introducing potentially invasive species for agroforestry (see below).
- Aquaculture is often proposed as a sustainable livelihood alternative for farmers/fishermen in the Lake Tanganyika basin. However, it is one of the greatest threats to biodiversity as it typically involves highly invasive species (e.g. *Oreochromis niloticus* or other tilapia species that are not endemic to Lake Tanganyika). Similarly, some of the species promoted for agriculture, forestry and agroforestry can be invasive (e.g. *Tithonia diversifolia*, which is often used to improve soil fertility, and *Senna siamea*, a potentially invasive tree that was promoted for agroforestry purposes by this project). It is recommendable for future catchment management projects that they consider the negative aspects of introducing new species, both in the lake as well as on land.

### Dr. Fergus SINCLAIR, Global Research Leader, ICRAF

Involved with the project since April 2010.

#### A) Background

- ICRAF has been involved with the DRC Component since the start, offering technical backstopping and capacity building for catchment management interventions.

#### B) Good Practices and Successes

- The approach taken by ICRAF in collaboration with the PMU is exemplary and novel for sustainable development initiatives.
- A participatory approach was taken that changes the dynamics of stakeholder negotiations by bringing scientific knowledge into the negotiation process about what to do in the landscape, and subsequently linking evidence with action.
- Targeting of sites and approaches was done by an objective analysis of key degradation hotspots prior to commencing field activities. A participatory approach was followed, and functionaries were involved in developing the analysis to generate buy-in.
- Hotspot analyses based on satellite imagery provided a visual tool for site targeting. Satellite analyses were subsequently ground-truthed by fieldwork. These analyses resulted in the inclusion of sites higher up catchment, which are a key source of sedimentation.
- ICRAF took a rigorous, iterative approach to combining local knowledge and local understanding about natural vegetation with sophisticated scientific knowledge to ensure that the right tree was found for the right farmer, situation, and location.
- The scientific evidence that was used in rigorous analysis of degradation hotspots and appropriate tree species to plant in different contexts, was based on modern methods and datasets. The approach used by this project demonstrates that techniques do not have to be rudimentary to be useful at the local level. Most extension manuals simply recommend a few 'priority' tree species and give details on how

to propagate them. The approach used by ICRAF is more sophisticated than that, but nevertheless still practical for use at grassroots level and far more effective because farmers receive more customized and therefore locally relevant advice.

- The approach used also demonstrates that there is substantial local knowledge that can be used for sustainable development.
- Extensive efforts were made to obtain an understanding farmers' perspectives, and relating degradation to activities of farmers. There is significant local understanding about erosion in different parts of the landscape, and farmers know a lot about trees.
- Farmers understood the utility of the trees, and they remembered some of the species that had been forgotten about as they had started to disappear from the landscape and were not promoted by foresters. Local farmers are not used to planting indigenous trees, these are seen as something that you can just take from the natural environment. Through the involvement of the project, a process was catalysed to revalidate indigenous species for use in agroforestry and local development.
- Previously, mostly non-endemic trees were promoted, such as Eucalyptus species. ICRAF worked together with the farmers to research and promote increased diversity and use of endemic tree species in local forestry and agroforestry.
- Local knowledge and understanding was combined with scientific information about naturally occurring species, their different utilities and ecological niches.
- By working closely together with the farmers and integrating their knowledge, substantial buy-in was generated.
- Recommendations were customised to different part of landscapes and different farms, soil types, position, etc. This approach led to increased diversity of species on a larger scale than just individual plots.
- One of the factors that contributed to the success of the activities was the involvement of an expert in both agroforestry and local livelihoods, who spent significant amounts of time in the field working together with the PMU and local farmers.
- A tree selection tool was developed to offer a framework for people to use independently.
- The project also legitimated local efforts to generate nurseries to produce seedlings.

### **C) Lessons Learnt and Future Recommendations**

- The project was very lucky to find an international consultant who combined expertise on both agroforestry and local livelihoods, and was motivated to spend extensive periods of time working in the field under challenging circumstances. Because it is rare to find this combination of skills and interests in a single person, it would be recommendable for future projects to budget for at least two consultants for this type of work.
- The overall M&E framework of the project placed too much emphasis on the number of trees planted, and acres covered. What is important in development terms is not how many trees are planted, but their effect on the environment and on improving local livelihoods.

### **Emilie Smith, Consultant Agroforestry Systems, ICRAF**

Involved with the project since November 2010

### **B) Background**

- The main aim of the consultancy was to conduct a participatory study on local ecological knowledge associated with land degradation and agroforestry interventions.
- An additional aim was to design specific tools and manuals for tree species selection and agroforestry interventions to reduce erosion and enhance livelihoods.

### **B) Good Practices and Successes**

- The collaboration between ICRAF and WWF is an example of a good practice. Both organisations positively closely worked together to strengthen each other, and so generate the best possible results for the UNDP-GEF Project.

- Very different stakeholders were grouped to discuss and find solutions for sustainable catchment management together. These stakeholders had not previously been interacting on that level, and to get them to agree on key topics was a substantial success that indirectly also contributes to increasing the conflict resolution capacity in the region.
- For the first time, tree diversity in the Uvira Territory has been successfully documented and subsequently used for sustainable livelihood diversification.
- Local farmers were actively involved in tree selection processes. They moved from a narrow range of exotic timber species to being able to use a wide selection of species.
- The project stimulated the use of indigenous species, such as Mukuyu (*Ficus sicamorus*), which is traditionally considered a sacred tree in most of East Africa and its fibres are used for cloth making.
- Instead of providing just one blanket recommendation, the project promoted specific trees for specific circumstances and needs.
- Diversification of tree species was an extensive effort but a large success.
- The process of combining local knowledge with scientific evidence and so increasing the use of indigenous tree species for agroforestry was very empowering for the stakeholders.
- Stakeholders were motivated to protect natural regeneration, which led to the successful establishment of a new community forest area.
- Stakeholders were also successfully encouraged to reject the traditional practice of creating bushfires to create and/or fertilise agricultural plots.
- Technical knowledge was increased of a wide group of stakeholders, including extension workers, farmers, other partners, NGO's and CBO's.
- People were trained so that they can continue working in the region, thus providing a solid base for sustainability.
- The project was very successful in raising awareness of local stakeholders, which resulted in increased understanding about the environmental challenges and the possible solutions.
- Instead of only inviting stakeholders from the Government to workshops, they were taken into to the project sites, so that they could verify the actual situation in the field.

### **C) Lessons Learnt and Future Recommendations**

- Extension services at the local level are far from sufficient, and not operational because of the terrain, and insufficient means. Countries where there is a strong input from government extension services, such as Rwanda, have a much higher success rate of establishing sustainable structures. This is evidenced by the much higher incidence of sustainable land management practises such as contour terracing in Rwanda.
- Considering the socioeconomic and environmental situation in eastern DRC, continued donor support will be needed for larger scale catchment management interventions, and extension of smaller scale interventions.
- Nurseries require funding because the logistics. Stakeholders also received training in agroforestry interventions that don't require a nursery, such as transplanted wildlings, and direct planting of cuttings. This is an old practice that is low cost and had almost disappeared from use at the local level, but it is low-cost and very useful at the individual homestead level.
- Establishing nursery enterprises might be an idea to promote the continuation of good agroforestry practises. Local associations that have received training can continue some of the activities. However, the DRC economy is very weak and it is not clear if the local markets are strong enough. This would need to be investigated.
- Another option is for members of the associations to contribute financially, and receive seedlings in return. This would assume that the members have sufficient financial resources themselves.
- In general, it would be recommendable to implement a study on the local economic situation. This would not only be beneficial from an agroforestry/nursery perspective, but also for the energy-efficiency activities.
- Creating contour terraces is difficult without extension of support, because it is labour and knowledge intensive.
- The calendar of funds needs to be better adapted to the calendar of seasonal planting. Seed sourcing anticipation is an important part of that. Seeds need to be purchased well in time for nursery

preparation.

- Women were not sufficiently involved in the training programs and workshops of the project, probably as a result of the fact that they are traditionally seen as not capable of doing technically skilled work. There seems to be quite a lack of emancipation. In the field, the women were doing most of the labour, whereas the men were keeping oversight. Cultural differences between men and women need to be better understood, and gender aspects should be more explicitly taken into account in project design and implementation.
- Illiterate communities should be taken into account more explicitly. Outreach methods need to be adapted, and illiterate people need to be engaged more actively so that they can also have access to knowledge generated by the project. This would involve mobilizing more human resources for outreach activities (using women for this purpose might be a good idea).
- To increase the amount and impact of knowledge sharing, farm to farm visits would have been useful, either within the project area or outside (e.g. visits to farms in Rwanda). Active engagement with people who have similar experiences is a strong educational tool.
- The timeframe of the project was very small to establish a strong basis for continuation of good land management practices. A longer presence in the area would be helpful in ensuring sustainability.
- The M&E framework should be based on an adequate balance between quantitative and qualitative targets. Species that are easily obtainable or easy to propagate are not always necessarily the best trees for the circumstances. Placing significant emphasis on quantitative targets and indicators in the M&E process poses the risk that local managers decide to choose “easy” species instead of species that are better suited for the local circumstances. In the end, this has an adverse effect on reaching the development targets.
- There needs to be increased awareness and appreciation among the donor and developing community about the fact that it takes time for trees to grow, and that selecting the right trees takes time as well. Before establishing nurseries, it needs to be decided which species are appropriate for use in the specific situation. These are all processes that take substantial time, and should be better planned in project documents.
- It would also be recommended for local associations to connect to the Landcare network. Stakeholders were informed about Landcare during one of the workshops organised by ICRAF in DRC (as well as in Tanzania and Zambia). ICRAF supports the Landcare approach. Currently, most of the Landcare information is only available in English, but if there is increased interest from Francophone countries perhaps this could change.
- To promote continuation of sustainable catchment management activities after the project ends, establishment of a Catchment Management Committee with local associations and authorities might be a good idea.

## ANNEX V

## NATIONAL WORKSHOP AGENDA



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UNDP-supported, GEF-financed Project on  
Partnership Interventions for the  
Implementation of the Lake Tanganyika  
Strategic Action Programme, DRC Component



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### SUSTAINABLE CATCHMENT MANAGEMENT INTERVENTIONS IN THE UVIRA TERRITORY, SOUTH KIVU PROVINCE

### Lessons Learnt and Recommendations for Future Sustainability National Workshop

*Shekina Conference Hall, UVIRA, DRC*  
8<sup>th</sup> February 2013

#### WORKSHOP OBJECTIVES

- Share project realization including implementation strategies and challenges
- Share key lessons learnt for up scaling

#### Proposed Agenda

TIME	ITEM	Responsible
	<b>Opening Session</b>	
08h 30 – 09h 00	Registration Introduction and Agenda	Christophe/ Jean Onyango Daniel Nzyuko
09h 00 – 09h 45	<b>Opening Speeches</b> <ul style="list-style-type: none"> <li>• Welcome speech, Administrator, Uvira</li> <li>• WWF – Programme Manager</li> <li>• WWF – Regional Director</li> <li>• UNDP/GEF, Regional Project Coordinator</li> <li>• LTA – Executive Director</li> <li>• DRC LTA Management Committee – Chair &amp; Director of Fisheries</li> <li>• Chief Guest – Provincial Minister of Agriculture, South Kivu - Official Opening</li> </ul>	Dr Nshombo

**Proposed Agenda (continued)**

09h 45 – 10h 15	Coffee / Tea Break	
<b>Theme</b>	<b>Project Realisation / Achievements</b>	
10h 00 – 13h 00	<ul style="list-style-type: none"> <li>• Presentation on Project achievements / realization, by PMU team (50 mins)</li> <li>• Strategic partnership &amp; Indigeous Agroforestry Innovations, by ICRAF (30mins)</li> <li>• Community Institution &amp; Sustainability of Catchment management and protection, By CIV (30 mins)</li> <li>• Community Institutions &amp; Sustainability – alternative technologies &amp; efficient energy technologies, By SAFAU (40 mins)</li> <li>• Environmental education &amp; sensitization, By PMU, (15 mins)</li> </ul>	<p>Daniel/Pacificq &amp; Zachary</p> <p>Emilie Smith, ICRAF</p> <p>Chairman, CIV</p> <p>Chairman, SAFAU</p> <p>Daniel &amp; Gilda</p>
13h 00 – 14h 00	<b>Lunch Break</b>	
<b>Theme</b>	<b>Lessons learnt</b>	
14h 00 – 15h 30	Lessons learnt and recommendations for future sustainability	Dr. Saskia Marijnissen, Consultant
15h 30 – 16h 00	Coffee/Tea Break	
16h 00 – 16h 30	<b>Wrap up</b>	
16h 30 – 17h 00	<p><b>Closing speeches</b></p> <ul style="list-style-type: none"> <li>• UNDP/GEF, Regional Project Coordinator</li> <li>• LTA, Executive Director</li> <li>• LTA Management Committee, Chairman</li> <li>• WWF</li> </ul>	Daniel, WWF
18h 00 – 19h 00	COCKTAIL	Gilda

**ANNEX VI****NATIONAL WORKSHOP PARTICIPANTS****National Workshop****Shekina Conference Hall, UVIRA, DRC****8<sup>th</sup> February 2013**

#	NAME	ORGANISATION	FUNCTION	PHONE
1	Dieudonné MPANDA	MINAGRI	DIRECTEUR CABINET	.997705792
2	AMISI KUONEWA François	MINI-PROV-ENVIRO	DIRECTEUR CABINET	.998660441
3	KATONDA KAITIRA Hibrâhim	LTA	Ag EXECUTIVE DIRECTOR	.79138000
4	Samuel LUNGANGA LENGA	Adm du territoire d'Uvira	A,T UVIRA	.991105076
5	SIMBOTWE MWIYA	UNDP GEF	REGIONAL PROJECT COORDINATOR	.71513397
6	Desire EBAKA	ALT	DAF	.79810834
7	Gabriel HAKIZIMANA	ALT	DIRECTEUR -ENV,	.79932099
8	SEDEKE OKWUL Chrispin	COMITE DE GESTION	MEMBRE	.999922134
9	Isidore KIBAYA	COMITE DE GESTION	MEMBRE	.999994331
10	NA'ABWE Charlotte	COMITE DE PILOTAGE	MEMBRE	.811827147
11	Alphonse NYANYA ALO	MINAGRIDER/KIN	CONS,PECHE&AQUAC	.810252138
12	Emilie SMITH	ICRAF	CHERCHEUR	+254726113107
13	AMUNDALA Constantin	CRH	DIRECTEUR GENERAL	.994263203
14	Deodatus KILOLA	CIV-GRN	P,Conseil d'Administration	.991369296
15	SASKIA MARIJNISSEN	WWF	CONSULTANT	
16	MUSHONIO B,RUSATI	ASSEMBLEE PROVINCIALE	DEPUTE PROVINCIAL	.990903727
17	Yves MUNGURA DUNIA	IAT/UVIRA	INSPECTEUR AGR	.991949045
18	Dr,ASUMANI Bernard	IPAPEL	INSPECTEUR PROV	.83126625
19	Ir ,KIBANGU MWEMELIE	CPECN/SUD-KIVU	Repr,Coordination Prov	.997622372
20	Victor RUZIRIGERA	DEVELOPPEMENT RURAL	INSPECTION DEV RURAL	.812675852
21	Ir,BYAMUNGU ZEMBEZEMBE	CHEFFERIE DE BAVIRA	Secréteur rapporteur	.994018474

22	MWAMI LENGHE Ed	CHEFFERIE / BAVIRA	Autorité Traditionnelle	.999802132
23	KABIONA KASIGWA J,Claude	PRODAP/RDC	Encadreur technique	.997603081
24	Jean Bosco KWABENE	PRODAP/RDC	Comité de pilotage	.997090263
25	MANARA	UCN/PRODAP/RDC	COORDINATEUR	.0998585093
26	PATRICIA MAISHA	COMITE DE PILOTAGE	MEMBRE	.0995630826
27	Dr NSHOMBO MUDERHWA	CRH UVIRA	CHERCHEUR	.0993157064
28	DANIEL NZYUKO	WWF	COORDINATEUR	+.254796750016
29	PACIFIQUE MUGARUKA	WWF	PROJECT MANAGER a.i	.0997086411
30	GAYO LEMBA	MINAGRIDER	DIR. NAT. PECHE	.0999912450
31	SEVE JUAN	WWF RDC EST	DIR. PROGRAMME	.0816845188
32	RALLY WA RALLY	CHEFFERIE DE BAVIRA	CHEF DE GROUPEMENT	.085363241
33	BUSSENY MALOLE BENJAMIN	CHEFFERIE DE BAVIRA	CHEF DE GROUPEMENT	.0993249493
34	ALINOTI UNDCI	GIZ /ASCU	EXPERT EN SUIVI EVAL.	.0994406702
35	BASIMISE BURUMBA	MINISTERE DU PLAN/UVIRA	RESP. S/G	.0991592719
36	MUSHUMBE HERMAN	ENVIRONNEMENT UVIRA	SUPERVISEUR	.0997721654
37	KUBIHA MALAGO VINCENT	SOCIETE CIVILE	COMITE DE PILOTAGE	.999801943
38	AMANI PAPY	CONSULTANT WWF	REALISATEUR FILM	+.25773924739
39	NIMBONA BONIFACE	RAPPORTEUR	CONSULTANT	+.25779906745
40	AUGUSTIN BAHONE	ANR	RESPONSABLE UVIRA	.0990305040
41	CHRISPIN KISHEKUZI	CIV	CHEF DE PROGRAMME	.0997132468
42	MULOKWA MULONDA ESPERANCE	SAFAU	TRESORIERE	.0852946879
43	JEAN DE LA CROIX WILONDJA	SAFAU	PRESIDENT	.0991411393
44	BYADUNIA MESHACK Alexis	SOCIETE CIVILE/P,DE JEUNE	PRESIDENT	991411393
45	PASCAL KYANGA	CARITAS	ASSISTANT COORDINATEUR BDD	.0810343665
46	BAUDOUIN BOYONGO	PNC	Cmd DISTRICT	.0992006414
47	DOMITIEN NDIKUMANA	CONNECT INTERNATIONAL	INTERPRETE	+.25779492498

48	INNOCENT NIYONIZIGIYE	CONNECT INTERNATIONAL	DIRECTEUR DES OPERATIONS	.+25779978765
49	NGENGE BUSOMERE	WWF	FORESTIER	.0992740073
50	NDAYISHIMIYE DEO	CONNECT INTERNATIONAL	ADG	.+2577778149
51	NINZIKA NARCISSE	CONNECT INTERNATIONAL	TECHNICIEN	.+2577957418
52	CHRISTOPHE NSHAGI	WWF	LOGISTICIEN	.0998672952
53	KIJANDA LULEGE	PAPEL / UVIRA	CHEF PSA	.0997721698
54	MBILIZI MWETAMINWA	AFFAIRES FONCIERES	CONSERVATEUR	.0993087269
55	JEREMIE KUHIMA	RADIO MITUMBA	JOURNALISTE	.0994085670
56	MARIE PONGA	GENRE FAMILLE ENFANT	CHEF DE SERVICE	.0993836840
57	PASA JUVENAL AMISI	COVIRA	CHARGE DE LA LOGISTIQUE	.0994288259
58	HERADY FATAKI	COVIRA	CHARGE DE RELATION PUBLIQUE	.0997623732
59	SANGO BENGA	SAFAU	VICE PRESIDENT	.0817825565
60	KAFOTO RUKAKIZA	CIV	COORDINATEUR TERRAIN	.0853193785
61	MUBWARI FAIZI	AUM	PLANTEUR	.0842330601
62	GABRIEL KINSAMBA	ISDR	ETUDIANT	.0990943649
63	SHOSHI NAKASAJA	AEAKI	PLANTEUR	.0853516886
64	ZACHARY MARITIM	WWF	EXPERT SIG	.+254721671642
65	ERIC BYOBE MIZOSE	WWF	CHAUFFEUR	.0991388570
66	JEAN ONYANGO	WWF	COMPTABLE	.+25472225440
67	MULASI TOSHA	FOMEKA	SECRETAIRE	.0994285327
68	MAVINGA GILDA	PROTOCOLE	PROTOCOLE	.0991949028
69	ADOLPHINE FEZA	PROTOCOLE	PROTOCOLE	.0997116988
70	NYOTA BOMA	ADRA	ASS. RESIL. COM.	.0993092347
71	RIZIKI GERMAINE	PROTOCOLE	PROTOCOLE	.0995239236