

ADDRESSING THREATS TO BIODIVERSITY AND ECOSYSTEMS SERVICES IN AGRICULTURAL LANDSCAPES: LESSONS FROM TOBACCO GROWING AREAS OF MIDDLE NORTH – UGANDA

POLICY BRIEF

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Michael Opige¹, Alex Bataamba Muhweezi², Jonathan Kisakye¹, and Balram Dhakal³

1. BACKGROUND

There is increasing pressure on ecosystems across Uganda, mainly from growing population. Uganda's population was about 2 million in 1900, rising to 4.8 million in 1950 and to 24.3 million in 2002 (UBOS, 2002) and it is now estimated at over 37 million (NewVision, June 23, 2013). The management of ecosystems and landscapes in the context of this increasing population requires a lot of planning for resource use and conservation yet there are inadequate extension services to help increase agricultural production per unit area while ensuring a healthy resource base (FAO, 2010). In particular, the northern region of Uganda which suffered from a civil war from 1985/6 to 2007 is facing rapidly increasing population after the return of stability. This has not only resulted into significant destruction of natural resources or biomass but has also put pressure on remaining natural resources.

Most of the population in mid northern region of Uganda depends on agriculture for their livelihoods. Tobacco growing is one of the key agricultural activities in the region. No doubt, the demand for agricultural land to feed increasing population is creating pressure on natural resources, especially on forests. A recent study indicates that during the period 1985- 2002, Lira district lost about 19% of its woody cover while Apac/Oyam lost over 7% (FAO, 2010). Also, fertilizer and pesticides used in agricultural lands such as tobacco growing areas that are located in close proximity to wetlands for easy access to water have been a threat to wetland biodiversity. Furthermore, wetlands and

forests are susceptible to degradation because they are potential sources of fuelwood for cooking and tobacco curing (Lecours *et al*, 2011). This situation requires strong policies and their implementation to address the issues related to agriculture, biodiversity and ecosystems in agricultural landscapes in the northern region of Uganda.

This policy brief highlights some key impacts of subsistence as well as commercial agriculture and other land uses on ecosystems and provides recommendations to strengthen policy implementation for better management of natural resources in agricultural landscapes in mid northern Uganda. *NatureUganda* and Tree Talk who have extensive experience in working in the middle north in the field of conservation are now jointly implementing a British American Tobacco Biodiversity Partnership (BATBP) project - Addressing Management for Biodiversity and Ecosystem Services in Agricultural Landscapes which is being implemented in northern region of Uganda since 2012. We draw the experiences and lessons learned from the recent project and use them to highlight policy deficiencies in this policy briefing paper.

The Biodiversity and Ecosystem Services (BES) project is led by Tropical Biology Association (TBA) and implemented by two leading Ugandan conservation partners, *NatureUganda* and Tree Talk. The project has been working in collaboration with BAT Uganda to help them address their biodiversity impacts and improve management of resources upon which they depend for their leaf growing operations thereby enhancing the conservation of biodiversity and ecosystem services in the landscape that is dominated by agriculture including tobacco farming. The project established five demonstration areas in Gulu, Apac, Kole and Oyam districts to showcase best practices in BES and improve community livelihoods.



2. THREATS TO BIODIVERSITY IN KEY ECOSYSTEMS IN MIDDLE NORTH

The key ecosystems in middle north are wetlands and forest reserves. Wetlands cover over 5% of the total area in this region while there are 44 Central Forest Reserves (CFRs) and 10 Local Forest Reserves (LFRs). The key CFR is Opit which is located in Gulu district covering over 5,000 hectares of land. Like most of the forest reserves, Opit CFR has been heavily encroached for agriculture and settlement. The major wetland systems include Okole which covers Sub-Counties of Akalo, Bala, Ayer, Alito and Aboke (Kole District) and Inomo, Chegere and Ibuje (Apac District) and Tochi wetland in Gulu and Oyam districts traversing through the Sub-Counties of Aber, Acaba, Ngai, Minakulu and Myene (Oyam district) and Ongako, Bobi, Koro, Layibi Division, Lakwana and Abok (Gulu District). These important natural resources as well as other key ecosystems including grasslands are threatened by human activities and needed urgent interventions for wise use and restoration (see Table 1). Illegal timber harvesting (pictured) is threatening LFRs and CFRs in northern Uganda



Illegal timber harvesting (pictured in Inomo, Apac) is degrading forest reserves



Rice growing (pictured in Ngai, Oyam) is threatening wetland ecosystems functions.

Table 1: Status of Major Natural Resources in the project area

Resource	Status	Requirements for biodiversity conservation and enhancement of ecosystem services
Wetland biodiversity	<p>Wetlands exist in form of seasonal (that form in low lying areas only during the rainy seasons but lose most or all of their water during the dry season) and permanent (that are flooded during rainy and dry seasons) wetlands covering approximately 5% of the total land in project area.</p> <p>Paddy rice growing, brick laying, horticulture, sand mining and unsustainable fishing (burning wetlands to catch premature fish) are some of the major issues threatening biodiversity in major wetlands including Okole and Tochi.</p>	<p>1. Sustaining wetland ecology: Ecological and biological characteristics differ between seasonal and permanent wetlands and therefore conservation action ought to reflect the most feasible options for sustaining the ecological condition of the targeted wetlands. For instance, conservation of seasonal wetlands ought to reflect possible human uses during the dry season (e.g., grazing, fishing, harvesting grass thatch) and wet season (rice growing).</p> <p>2. Managing wetland edge gardening: Horticulture is increasingly taking place along major roads (trade routes) affecting wetland biodiversity. This practice needs to be regulated or monitored in accordance with the Guidelines for Wetland Edge Gardening. The main emphasis should be put on maintaining of the 30m buffer to the wetland while farming.</p> <p>3. Sustainable harvesting of wetland resources: Resources like trees are being excessively harvested for charcoal, fuelwood for domestic and commercial use. There is need to introduce mechanisms to ensure such resources are sustainably harvested without affecting the wetland ecosystem and its functions. Such strategies could include improved kilns to improve wood to charcoal conversion and providing alternative sources of energy or increasing stock of trees.</p>

Resource	Status	Requirements for biodiversity conservation and enhancement of ecosystem services
Forests	<p>There are: 10 Local Forest Reserves 33 Central Forest Reserves (for natural forest management) 11 Central Forest Reserves (for "Plantation Forestry").</p> <p>Perpetual burning of forest reserves by communities is taking its toll on natural regeneration.</p> <p>Encroachment for settlement and agriculture has caused conflicts between communities and forest authorities. These conflicts are deterring restoration work and increasing forest degradation.</p>	<p>1. Elimination of encroachment: Most forest reserves have been encroached upon for agriculture and settlement. This has not only resulted in deforestation but has also attracted invasive plant species like <i>Lantana camara</i>. Communities need to be engaged in managing forest reserves through formation of Collaborative Forest Management groups to try and change land use in forest reserves from agriculture to forestry.</p> <p>Restoring integrity of the forest reserves through re-establishing forest boundaries: forest boundaries are not clearly visible making it difficult to stop encroachment.</p> <p>2. Strengthening management effectiveness: management capacity for NFA or districts is very limited due to understaffing and financial and logistical constraints.</p> <p>3. Ensuring relevance of the management objective: these forest reserves were gazetted for either plantation forestry of or for conserving natural forest. To-date, the poor ecological condition of these forest reserves or failure to establish plantations in these designated reserves tend to undermine the objective of gazetting these lands forest reserves.</p> <p>4. Regulating harvest and sale of forest products: Enforcement of timber harvesting regulations that are being developed by the Forest Stewardship Council (FSC) is likely to eliminate timber harvested from unsustainably managed sources and lead to sustainable management of forest reserves. It is also important to enforce the current laws and regulations in the National Forestry and Tree planting Act 2003.</p>

3. USING AN INTEGRATED LANDSCAPE APPROACH TO CONSERVATION

Addressing conservation issues in this landscape is beyond the capacity of a single agency as different actors interact with each other in the landscape. Also, the distribution of some of the flora and fauna extends beyond a single ecosystem and therefore conservation of a single ecosystem cannot be effective in conserving species in a landscape, an integrated approach that can conserve resources at landscape level is most suitable. Given this reality, this Biodiversity and Ecosystem Services (BES) restoration project adopted a holistic landscape approach that seeks to reconcile commercial agriculture, conservation and other land-uses to enhance conservation as well as community livelihood options.

The project is working with a wide range of stakeholders including farmers, schools, policy makers, law enforcers, local government, extension workers and community development officers to improve understanding of biodiversity and ecosystem services that are essential for sustainable agriculture, develop initiatives for biodiversity and ecosystem services for conservation and livelihoods improvement, and to restore key forest and wetland ecosystems in the area. This livelihoods-based landscape approach has received great acceptance by communities because of its potential to improve incomes while enhancing conservation in communities vastly dependent on nature.

4. KEY INTERVENTIONS AND ACHIEVEMENTS

Since the implementation of the project began in 2012, the project has made significant progress in terms of promoting conservation and enhancing rural livelihoods. We are working with a wide range of stakeholders from farmer communities to local and national government agencies and Non Governmental Organisations. The communities and local government authorities were initially skeptical about the performance and importance of certain tree species planted by the project, the desire for commercial fast growing tree species was too high, partly because these were the tree species every tree planting project was promoting but also because of the need for a 'quick fix' to community needs of firewood and poles.

However, continued awareness raising on the importance of equally fast growing multipurpose indigenous tree species like *Maesopsis eminii* (musizi) and *Markhamia lutea* (lusambya) has caused a twist in preference from exotic tree species like pine and eucalyptus. Similarly, the project has achieved great milestones in establishment of woodlots in schools and communities, development of BES practices including developing agroforestry models, establishment of orchards, developing soil and water conservation technologies and building the capacity of stakeholders to demonstrate and promote these initiatives that underpin sustainable agriculture in the landscapes. We also produced key documents to enhance understanding BES including a status of biodiversity survey report in mid north and guidelines for conservation of biodiversity in agricultural landscapes among others.

a) Developing and demonstrating practices for biodiversity and ecosystem services

This project set out to develop and demonstrate the practices for conservation of biodiversity and ecosystem services which include agroforestry, integrating fruit trees on farm, and establishment and management of apiary sites using modern Kenyan Top Bar (KTB) beehives. We have developed model agroforestry systems integrating crops such as sorghum and maize with multipurpose trees with over 100 farmers in Chegere, Inomo (Apac district), Bala (Kole district) Iceme and Ngai (Oyam district) and Lakwana in Gulu district. To promote soil and water conservation, trenches were dug in farmers' gardens and planted with lemon grass and *Calliandra calothyrsus*, these will in addition to controlling soil erosion, improve soil condition and supply fodder and firewood. *Terminalia superba* and *Maesopsis eminii* were planted on boundaries, as alleys and scattered trees on farms. A total of 4,900 seedlings were planted to develop these agroforestry models.

The project is supporting farmers to grow fruit trees mainly for household income generation and enhancing biodiversity conservation. Seedlings of grafted mangoes, budded oranges, avocado and Jack fruit have been planted by farmers in Inomo and Chegere (Apac), Bala (Kole) and Iceme and Ngai (Oyam). Fruits are expected to diversify income sources of farming communities in the project area and contribute to food and nutrition security of participating households.

Similar to the work on fruit growing, a number of key farmers are being supported to establish and manage apiary sites. These practices are not only expected to help enhance the income of the farmers involved but also improve the ecosystem services in the area by increasing the number and diversity of bees that will result into better pollination and on-farm yields. The project has established apiary sites for twelve community groups in Ngai and Iceme Sub Counties (Oyam), Lakwana and Lalogi Sub Counties (Gulu district), Inomo and Chegere Sub Counties (Apac district) and Bala Sub County (Kole district) have been supported with 220 KTB beehives for honey production. Over 60% of these hives have been colonized and honey harvesting is expected between February and March 2015 presenting a quick opportunity for communities to realize tangible benefits from this conservation project. The projected annual income from honey harvesting is projected at Ugx 63,000,000 which constitutes a significant proportion of their family income. The planning for harvesting, value addition and local marketing of products is underway.

b) Restoration planting

Work is underway to restore degraded farmlands and forest reserves and planting woodlots as assets for schools and sub counties. Over 200 tobacco and non-tobacco farmers have planted trees ranging from 200 to 4,500 seedlings of assorted indigenous tree seedlings including *Khaya senegalensis*, *Milicia excelsa* and selected exotic species as boundary marks for their land, compound planting or woodlots for firewood, poles and timber now totaling to over 900 acres with approximately 70% surviving. School woodlots will be an important source of firewood and poles too and act as demonstration centres

for knowledge transfer for learners, parents and nearby communities. There is a lot of interest building up within communities and stakeholders that were not initially targeted by the project like police stations and churches that have expressed interest and have now planted trees as a demonstration of best practices for environmentally sensitive institutions.

The restoration of key forest reserves is critical in these landscapes not only to protect key habitats and species but also to sustain the ecosystem services they provide. The project is working to restore four key Forest Reserves in the project areas together with stakeholders including National Forest Authority, District Local Government Authorities and local farmer communities. In 2014, 28 hectares of Opit Central Forest Reserve, 10 ha of Alito (Atan) Local Forest Reserve were restored after resolving land-use related conflicts in these Forest Reserves. In addition, restoration planting was carried out in 15 ha of Kulu-Obia and 10 ha of Iceme Local Forest Reserves. A total of 60,670 seedlings of seven different tree species including *Markhamia lutea* and *Grevillea robusta* were planted in these forest reserves. The project staff will continue to work with stakeholders to manage these plantations and raise awareness on importance of their conservation. The forest restoration work was supplemented by demarcation of forest boundaries as the lack of clear boundaries in some forest reserves has been a challenge to restore and manage these forests. The boundary demarcation process in Kulu-Obia Central Forest Reserve has been finalised in collaboration with National Forestry Authority, whereas in Opit Central Forest reserve, a reconnaissance survey has been completed by survey the team.

c) Developing wetland management plans

The project worked with Wetlands Management Department and the District Local Governments of Oyam, Gulu, Apac and Kole to develop wetland management plans for Tochi and Okole wetlands. We expect that the implementation of restoration activities recommended by these plans through an iterative consultation process with stakeholders will help conserve biodiversity in the wetlands. Local community committees have also been formed with the responsibility of guiding the implementation of the restoration plans for both wetlands.

d) Capacity building of stakeholders on BES practices

The project is working with stakeholders to develop their capacity to better understand the importance of biodiversity and ecosystem services and promote rolling out of 'best practices for sustainable agricultural landscapes'. Capacity building and awareness raising work includes trainings for farmers, teachers and local

government on the importance of managing biodiversity through responsible farming practices, management of soil fertility and skills in tending and managing trees planted. Radio is the major media of communication to farmers, through radio, our conservation messages reach communities beyond project borders through interactive live talk shows and conservation spot messages broadcast in both English and Langi (local language).

The production and sharing of different publications including a periodic project bulletin, guidelines for biodiversity conservation in agricultural landscapes, baseline biodiversity and socio economics survey report, is helping local stakeholders including extension workers to better understand and articulate the importance of biodiversity and ecosystem services to farmers. A video is also being produced to demonstrate the value of this model project and its strategies for enhancing BES to support agricultural landscapes and farmer livelihoods. It will be completed in 2015 and will be shared with wider stakeholder groups and enhance the potential buy-in of project initiatives by other organisations to replicate across other landscapes in Uganda, and indeed in Africa.

4.1 CHALLENGES TO PROJECT DELIVERY

Despite having achieved great success so far during the implementation of this project. The project team has encountered numerous challenges ranging from natural calamities like prolonged dry spells that do not favour activities of such a tree planting project and pest infestations especially for fruit trees, negative community attitude towards tree planting coupled with lack of knowledge on the same meant that the project invests a lot of financial resources and time towards changing the mindset of farmers especially in trying to change their preference from exotic species to multipurpose indigenous trees.

4.1.1 Livelihoods supported by nature

Due to the fact that communities in northern Uganda are hugely reliant on nature for their survival, exploitation of natural resources and encroachment on conserved areas like forest reserves and wetlands is difficult to regulate. This has caused a lot of encroachment for farming, resource extraction including those on private and public land like timber, firewood and charcoal production from wetlands and forest reserves, clay for brick laying and sand extraction for building from wetlands. These too have caused the process of restoration of these important ecosystems cumbersome. The project is demonstrating alternative enterprises to farming communities like apiculture and horticulture that have potential to reduce reliance on natural resources.

4.1.2 Poor farming practices

Conventional farming practices like slash and burn that are dangerous to soil diversity are still being used for land clearing in preparation for the planting season. Often times these fires go astray and catch neighbouring thickets, forests and wetlands. Trees planted by farmers have also suffered stray fires leading to loss of investment and frustrating farmers. Agroforestry is likely to reduce this practice as farmers will fear to lose their trees to fires.

5. CHALLENGES TO EFFECTIVE CONSERVATION IN MID – NORTH

The implementation of this project has provided an opportunity to learn about the challenges related to conservation and livelihoods in the region. Although project is working to address major conservation and livelihood challenges at landscape level, there are issues which need high level consideration and decisions. It is sad to note that there is general marginalisation of the issues in the Environment and Natural Resources (ENR) sector in the region, and this holds true across other regions of Uganda country (Mugenyi, 2011).

The marginalisation is shown in poor implementation of pro-conservation policies and low funding of the ENR sector at both national and local government levels. These have led to over exploitation of resources and lack of implementation of conservation measures by communities. It is important to note that the sustainability of these project establishments and future conservation initiatives greatly hinges on an enabling environment with strong institutional, policy and legal frameworks for conservation.

5.1 Poor policy implementation

While it is acknowledged that there exist strong policies that support biodiversity and ecosystems conservation, some of which include the National Environment Management Act 1995, The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, and the Land use Policy among others. The implementation of such policies has been very poor, and most of these policies are unknown by the resource users. Poor policy implementation has continued to lead to poor governance of natural resources, environmental degradation and mismanagement of the natural resources causing obstacles to enhanced agricultural productivity and income generation for the rural population.

Our experience of working in this project has picked evidence on heavy encroachment on CFRs, destructive activities in wetlands and inadequate extension services to farmers. A review of relevant policy documents including Kaggwa (2004) and Mugenyi (2011) highlights low funding for the ENR sector at local government as one of the causes to key failures to policy implementation at local government level.

We elaborate and highlight and emphasise other causes of a malfunctioning ENR northern Uganda platform below.

5.2 Low financing for the ENR sector

Uganda spends the least amount of its national budget on environment and natural resources compared to Kenya, Tanzania and Madagascar. Budget allocation for the water and environment sector showed perpetual decline in percentage allocation to the Ministry of Water and Environment with 2.6% in 2008/2009, 2.4% in 2009/2010 and 1.9% in 2010/2011 allocations and has continued to average 2% per financial year (Mugenyi *et al*, 2011). Often times the amount allocated to Local Government where implementation of conservation activities takes place is less than 1% of the national budget. This is inadequate to oversee a big sector such as the ENR that includes wetlands, forest reserves, and even monitoring biodiversity on private land. The sector therefore generally relies on donor funding causing a lack of sustainability for initiated projects.

Recommendation:

The Ministry of Water and Environment together with Environment and Natural Resources Civil Society Organisations through the Civil Society Budget Advocacy Group (CSBAG) should lobby the President, Ministry of Finance and Economic Development, and Parliament to allocate more financial resources to the Environment sub-sector to support service delivery at all levels. Additionally Civil Society Organisations should continue lobbying for support from development partners and international conservation funding organizations.

5.3 Lack of coordination between the players in the sector

The Environment and Natural Resources Civil Society Network report of 2012 emphasised the poor coordination among government ministries including Ministry of Agriculture Animal Industry and Fisheries, the Ministry of Water and Environment, the Ministry of Wildlife and Antiquities and their institutions like the National Environment Management Authority, Uganda Wildlife Authority among others which leads to shift of responsibility and perpetuating bureaucratic inefficiencies.

Recommendation: Ministries should in consultation lay down clear roles and responsibilities for their institutions to avoid conflict and ensure effective service delivery. A liaison officer or department needs to be created across ministries to ensure that each ministry understands what affects the other in the sector and avoid duplication of roles and responsibilities.

5.4 Declining law enforcement and compliance

The Environment Police Protection Unit (EPPU) was created with the mandate to enforce environmental laws in Uganda. However, the force is failing in its mandate citing poor facilitation and insufficient manpower. Government commissioned 153 cops to police lakes, forests and wetlands that are threatened by encroachment; this number is inadequate considering that the country now has over 110 districts that have been divided into several local administrative units. The District Environment and Forest Officers/District Forest Services of local government do not have enough capacity to monitor and ensure that all players are complying with agreed standards on natural resource use and management. There is need to increase awareness and promoting coordination among players in the sector to develop and implement enforcement measures at community level.

Recommendation:

The National Environment Act, 1995 created Local Environment Committees which have a role to play in coordinating with government structures at local, district and central government level on ensuring compliance to environment standards right from community level.

Local environment committees should therefore be facilitated and given the mandate to handle non compliance, arbitration and help in environmental law enforcement at community level in liaison with the EPPU. A police officer in charge of environment law enforcement is also required at least up to sub county level.

5.4 High dependency of population on natural resources

The protracted civil conflict in the north meant low education levels and resulting into a population that largely depends on natural resources. Most of the trees in the north are harvested for charcoal that is consumed in central Uganda and of late South Sudan.

Recommendation:

Government should prioritise the education sector in northern Uganda to create a generation that will be less dependent on agriculture and natural resources. Taxes should be levied on charcoal and such proceeds be used to strengthen monitoring and investing in energy efficient kilns for charcoal production.

5.5 Lack of extension services

Despite the need for forestry extension services across the country, trained staff are few and sometimes absent in areas with critical conservation issues. The conflicts within the National Agricultural Advisory Services have ensured its failure in its role to take extension services closer to communities. These, coupled with the low financing for District Forest Services and the inactive Local Environment Committees means that there are unreliable or no sources of technical advice to communities on issues of forestry and agriculture to help in regulation of community activities.

Recommendation:

Increasing forest extension staff at local government level to take services to farmers and training of Community Development Officers (CDOs) and all extension staff on BES practices.

6. CONCLUSION

Biodiversity and Ecosystems conservation are important in sustaining rural livelihoods and economic development of Uganda. The conservation of ecosystems in northern Uganda is being threatened by increasing population and unsustainable agricultural practices that have caused degradation of ecosystems on both private and public lands. The Biodiversity and Ecosystem Services project is progressing well on restoration of forest reserves and creating alternative sources of income for farming communities including fruit tree growing, apiculture and agroforestry.

Given the potential of these initiatives on conservation and livelihoods, we urge the stakeholders to consider replicating such activities in other regions. However, the successful implementation of these initiatives requires enabling policies, financing and political will. More specifically, addressing the need to empower all stakeholders within established structures at local government level to provide extension services to the communities and ensure timely reporting and compliance to environmental laws and regulations.

The current low ENR sector funding by central government is limiting implementation of policies and projects designed to address environmental degradation at local government level, and therefore causing non compliance. There is need to increase funding for such an important sector if the country is to realize sustained development and improved peoples' livelihoods especially in the rural areas where the majority of people depend on natural resources.

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About *Nature*Uganda

*Nature*Uganda, the East Africa Natural History Society is the oldest conservation organization in East Africa having been set up in 1909 as a scientific organization with the primary aim of documenting the diversity of wildlife in East Africa. Although the activities of the society were disrupted by political instability in Uganda in 1970s-1980s, the activities were rejuvenated in early 1990s with the identification of Key Biodiversity Areas (KBAs) such as the Important Bird Areas (IBAs) and Ramsar sites. Over the past 20 years, the activities of the organization have diversified to embrace biodiversity conservation and sustainable Natural Resource Management.

The organization implements research, conservation and advocacy programmes with particular focus on priority species, sites and habitats across the country. This is achieved through conservation projects, environmental education together with government lead agencies, local government and local communities, and membership programmes activities such as Public Talks, excursions and Nature-walks that are key advocacy and public awareness tools. Our mission is to promote the understanding, appreciation and conservation of nature.

In pursuing this mission *Nature*Uganda strives to:

- Create a nature-friendly public
- Enhance knowledge of Uganda's natural history
- Advocate for policies favorable to the environment
- Take action to conserve priority species sites and habitats

*Nature*Uganda is the BirdLife International partner in Uganda and a member of IUCN.

About FDI

Future Dialogues International Ltd is an organization with a Mission to facilitate and assist institutions and societies to achieve their sustainable development aspirations. FDI Mission is driven by FDI goal which is conservation and development aspirations contributing to sustainable development.

FDI believes that Sustainable Development efforts have often been disrupted by differences in opinions, mandates, knowledge levels, information sources, communication barriers, and lack of forum(s) to discourse and plan together for common action. Dialogue offers the best opportunity to overcome these disruptions and look at future scenarios. For good Dialogue to take place, people and institutional mandates must accept and respect each other.

FDI approaches its work through emphasizing the following:

Knowledge: generating evidence based ideas, documentations and innovations for achieving sustainable development. FDI seeks to promote learning approach to influence development and implementation of programmes and activities.

Empowerment: strengthening capacities and preparedness for better institutional and peoples performance. FDI seeks to promote stronger internal systems and procedures for programme/project identification/development, strategic planning, participatory natural resources/environmental management and planning, implementation monitoring and evaluations, conflict management and lesson learning.

Governance: promoting systemic improvement of legal, policy and institutional frameworks and institutions for the conservation and sustainable development actions. FDI seeks to promote harmony within and between policies, legal and institutional frameworks and their implementation.

1 *Nature*Uganda

Bwindi Mghahinga Conservation Trust (BMCT)
Building | Plot 1 Katalima Crescent,
Lower Naguru. P.O Box 27034, Kampala
Tel: +256 414 540719 | www.natureuganda.org

 @NatureUganda  NatureUganda

2 Future Dialogues International Ltd

Plot 1 Katalima Crescent,
Lower Naguru
P.O Box 4111, Kampala
www.fdiug.org

3 Tropical Biology Association,

Department of Zoology,
Downing Street
Cambridge,
CB2 3EJ - UK
www.tropical-biology.org