AFRICA BIODIVERSITY COLLABORATIVE GROUP
FISCAL YEAR 2014 ANNUAL REPORT

Biodiversity Analysis and Technical Support (BATS)

USAID/AFR/SD Award # RLA-A-00-07-00043-00

December 2014

Murchison Falls. Photo courtesy of Martin Malley /Flickr.

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ACRONYMS

ABCG	Africa Biodiversity Collaborative Group
AFR/SD	Bureau for Africa, Office of Sustainable Development
ANPN	L'Agence Nationale des Parcs Nationaux (Gabon)
AWF	African Wildlife Foundation
BATS	Biodiversity Analysis and Technical Support
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBFM	community based forest management
CCBA	Certification of Competency in Business Analysis
CI	Conservation International
CITES	Convention on International Trade in Endangered Species
CRC	Coastal Resources Center
CTF	conservation trust fund
EFA	environmental flow assessment
EPIQ II	Environmental Policy and Institutional Governance Indefinite Quantity Contract II
ESD	education for sustainable development
FAO	Food and Agriculture Organization
FC	freshwater conservation
FMP	forest management planning
FSC	Forest Stewardship Council
FY	fiscal year
FZS	Frankfurt Zoological Society
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GKMGE	Greater Katavi–Mahale–Gombe Ecosystems
GLISPA	Global Islands Partnership
GMDC	Grand Mayumba Development Company
GMP	general management plan
GVEP	Global Village Energy Partnership
ha	hectares
HCV	high conservation value
IBA	Important Bird Area
ICCN	Institut Congolais pour la Conservation de la Nature
ICDP	integrated conservation and development project
IEEA	Indigenization and Economic Empowerment Act
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
JFM	joint forest management
JGI	the Jane Goodall Institute
KOEE	Kenyan Organisation on Environmental Education
LAFR	local authority forest reserve
LSLA	large-scale land acquisitions
MBG	Missouri Botanic Garden
MDGs	Millennium Development Goals
MIKE	Monitoring the Illegal Killing of Elephants
MSP	marine spatial planning
MSSP	Maasai Stove and Solar Project
NDVI	Normalized Difference Vegetation Index

NGO	non-governmental organization
NKCP	Northern Kenya Carbon Project
NNPS	Nigeria National Park Service
NRM	natural resource management
NRT	Northern Rangelands Trust
ODK	Open Data Kit
PES	payment for ecosystem services
PFM	participatory forest management
PHE	population, health and environment
REDD+	reducing emissions from deforestation and forest degradation + climate change mitigation
RSPO	Roundtable on Sustainable Palm Oil
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SMART	Spatial Monitoring and Reporting Tool
SNAP	Serengeti National Park soil carbon dynamic model
SOC	soil organic carbon
SVC	Save Valley Conservancy
TNC	The Nature Conservancy
TSS	total suspended solids
UFNEA	Uganda Faiths Network on Environmental Action
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WASH	Water, Sanitation and Hygiene
WCS	Wildlife Conservation Society
WIO	Western Indian Ocean
WIO-C	Consortium of the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean
WIO-CC	Western Indian Ocean Coastal Challenge
WRI	World Resources Institute
WWF	World Wildlife Fund
ZPWMA	Zimbabwe Parks and Wildlife Management Authority

Executive Summary

INTRODUCTION AND GOAL

This report details the activities and accomplishments of the Africa Biodiversity Collaborative Group (ABCG) in Fiscal Year 2014 (FY2014)—October 1, 2013 through September 30, 2014.

ABCG is a consortium of seven United States-based international conservation non-governmental organizations (NGOs), which receives funding through the Biodiversity Analysis and Technical Support (BATS) Agreement of the U.S. Agency for International Development's (USAID's) Bureau for Africa, Office of Sustainable Development (AFR/SD). ABCG's mission is to help increase the effectiveness of USAID AFR/SD Africa Missions and African organization partners in tackling major existing and emerging threats to Africa's biodiversity, and in contributing to sound development and security based on wise use of natural resources and maintenance of ecosystem services. The consortium members are: African Wildlife Foundation (AWF), Conservation International (CI), the Jane Goodall Institute (JGI), The Nature Conservancy (TNC), Wildlife Conservation Society (WCS), World Resources Institute (WRI) and World Wildlife Fund (WWF).

ABCG's objectives are to:

- Promote networking, awareness, information sharing and experience among U.S. conservation NGOs working in Africa;
- Encourage information exchange and idea sharing with African partners;
- Identify and analyze critical and/or emerging conservation issues in Africa as priorities for both future NGO action and donor support; and
- Synthesize collective lessons from field activities and share them with a broader multi-sector community in the United States and Africa.

ABCG is thus an avenue for fulfilling the BATS program's goal, which is to build capacity within the USAID Bureau for Africa, its field missions, and its partners to more effectively incorporate biodiversity conservation into programming decisions. The BATS program began in 2006 as a multi-partner USAID Bureau for Africa effort, comprising Chemonics International under the Environmental Policy and Institutional Governance Indefinite Quantity Contract II (EPIQ II), and the U.S. Department of Agriculture (USDA) Forest Service International Programs under an interagency agreement. ABCG joined BATS under a two-year, $500,000 cooperative agreement from October 2007 through September 2009; the cooperative agreement was extended in 2009 through September 2014, with an amendment in 2011. Due to unforeseen delays in fund obligations, a number of ABCG activities and deliverables were not completed by September 30, 2014. ABCG obtained a no-cost extension of the award, until March 30, 2015, to complete this work.

Through the framework outlined above, ABCG has implemented activities on a number of major themes, broken into 17 tasks and sub-tasks over the life of the award.

FISCAL YEAR 2014 ACCOMPLISHMENTS

Overarching

ABCG organized, facilitated, and supported the following cross-task outputs in FY2014:

- Two large thematic meetings.
- Twelve brown bag talks.
- More than 35 research and peer-reviewed reports.
- Six maps to guide resource-use decisions.
- Four workshops.

Task A: Dar Vision for the Future of Biodiversity in Africa

One of ABCG's first goals was to create a vision for biodiversity conservation in Africa to guide members' work on the continent for succeeding decades. To this end, the consortium consulted extensively with conservationists, stakeholders, and technical experts, both in Africa and elsewhere, and analyzed lessons learned from 30 years of USAID experience in Africa. The process culminated in the *Dar Vision for the Future of Biodiversity in Africa*, written at a workshop in Dar es Salaam in 2008. Since then, the Vision has served as the broad framework for ABCG's work.

Task A was completed prior to FY2014.

Task B: Managing Extractive Industries to Protect Biodiversity

ABCG's goal is to provide analysis, outreach, and capacity building on ways to reduce biodiversity impacts from extractive industries in order to increase USAID and their partners' access to sound guidance and hence lessen the effects on biodiversity of future investments in the major extractive industries.

Task B.1: Mining and Biodiversity in the Democratic Republic of Congo

Activities for this task were completed before FY2014.

Task B.2: High Conservation Value (HCV) Forest Assessment

This task seeks to reduce the negative impacts of industrial development in Africa's forests by using evaluation tools to identify natural resources of particular conservation value. Commercial interests can use the information to focus extraction activities elsewhere.

FY2014 accomplishments, focused on Gabon, include:

- new distribution maps of large mammals (e.g., elephants, chimpanzees, gorillas), and threatened mammal, bird, and amphibian species;
- assessments of plant species on the International Union for Conservation of Nature's Red List; and
- preliminary assessment of HCV areas and candidate set-aside areas in the Grande Mayumba landscape.

For the remainder of the ABCG award, Task B.2 will conclude its Gabon work, including refining the large mammal maps and accordingly delineating candidate HCV areas, developing HCV maps for concessions in southwest Gabon, and writing a policy brief on aquatic ecosystem conservation.

Task C: Land Tenure and Biodiversity—Analyzing Biodiversity Conservation and Governance to Prevent Conflict and Crisis

The overall goal for this task is to promote sound governance and rights-based access to natural resources (promoting rights of local people, sharing benefits, engaging civil society, building capacity, ensuring stakeholder access to information and decision-making processes, empowering women, undertaking multi-sectoral approaches and partnerships, and promoting sound policy at all levels).

In FY2014, AWF continued developing models for community-level wildlife conservancies in Zimbabwe. JGI prepared communities for developing general management plans for two Local Authority Forestry Reserves (LAFRs) in Tanzania; the LAFRs had been created in FY2013 with funds from USAID's Tanzania Mission. TNC supported the creation of a conservation management steering committee for Tanzania's Greater Katavi–Mahale–Gombe Ecosystem region. WRI ensured the sharing of Task C experiences with the wider conservation and development communities by producing three short animated videos on Task C issues.

A number of pending activities will be completed by the end of the agreement. AWF will implement and, it is hoped, operationalize Zimbabwe's first wholly community-owned wildlife conservancy—the latter contingent on outside monies. JGI will create maps of high-biodiversity areas in the LAFRs for conservation prioritization. WRI will produce a fourth video, and a fifth after the award's completion.

Task D: Support for Country 118/119 Tropical Forestry and Biodiversity Assessments

This task was concluded before FY2014.

Task E: Food Security

This task was concluded before FY2104.

Task F: Addressing Global Climate Change through Adaptation and Actions in Woodlands, Grasslands and other Ecosystems

This task promotes climate change mitigation and climate adaptation for biodiversity and people.

Task F.1: Climate Change Adaptation

Goal: To mainstream human responses to climate change into conservation climate adaptation planning.

CI, TNC, WCS, and WWF are collaborating to fill knowledge gaps in how people and communities adapt to climate change. In FY2014, the partners' activities included writing a white paper on integrating human response to climate change into conservation vulnerability assessments. The group also developed and conducted a survey in five sites across four countries in order to increase the understanding of human responses to climate change.

For the remainder of the award, activities include submitting a manuscript of the white paper to a peer-reviewed journal, writing a case study about the survey methodology, and conducting outreach on the survey and its findings.

Task F.3: Woodlands, TRADE-offs and Climate Change

Goal: To provide case studies on how to integrate objectives of climate change mitigation, climate change adaptation, and biodiversity for REDD+ project developers, government stakeholders and planners in African countries with substantial woodlands, and the funders of climate change (adaptation and mitigation) in Africa such as USAID.

FY2014 activities included using Marxan, a conservation planning decision software, to develop models of the Kilimanjaro Landscape demonstrating wildlife species response to climate change. Ongoing activities include submission to a peer-reviewed journal on Murchison–Semliki Landscape findings exploring the distribution among stakeholders of opportunity costs of conservation.

Task F.4: Clean Energy and Eco-Charcoal

Goal: To build knowledge, capacity and accessibility of clean energy technology to enhance adoption of appropriate technologies and practices at a scale that provides meaningful natural resource and biodiversity conservation co-benefits.

AWF's activities in this task included training people how to make and maintain clean cookstoves through the Maasai Stove and Solar Project in Kenya, and installing 36 cookstoves. JGI identified ten villages in Tanzania for implementation of cookstove and other clean-energy activities.

Ongoing activities for the remainder of the ABCG award include JGI's promotion of briquette production and use in pre-identified locales.

Task F.5: Grazing Management and Carbon Sequestration

Goal: To understand how better planned grazing can be rolled out across multiple community conservancies, and to determine the extent of rangeland improvement and soil carbon sequestration.

This year's accomplishments on the part of TNC, in collaboration with Syracuse University, include the creation of a remote sensing methodology for monitoring grazing impacts and herder compliance. Ongoing activities include conducting LANDSAT imagery to support modeling of soil carbon sequestration and rangeland health tracking in 11 local conservancies in Kenya.

Task G: Bridging the Gap between Global Health and Biodiversity

Task G.1: HIV/AIDS and Conservation

JGI, in cooperation with Daulos D.C. Mauambeta, Managing Partner of EnviroConsult Services in Malawi, developed an HIV/AIDS training guide for conservation organizations and held a related training workshop in Tanzania. JGI also developed its own HIV/AIDS policy.

Task G.2: Water, Sanitation and Hygiene (WASH) and Conservation

Goal: To improve the ability of organizations working in sub-Saharan Africa on Water, Sanitation and Hygiene (WASH) and freshwater ecosystem conservation to plan, monitor, implement and evaluate the outcomes of integrated projects intended to achieve simultaneous health and environment goals.

CI, AWF, and TNC co-hosted a multisector workshop in Nairobi, Kenya, for African conservation, health and development practitioners, resulting in groundbreaking joint integrated WASH and conservation monitoring and evaluation framework. The group also developed an outreach plan for disseminating the draft framework with donors, multi-sectoral partners and other conservation, health and development practitioners in sub-Saharan Africa.

Task H: Forecasting and Analyzing Conservation Needs and Building Capacity on Critical Issues

Goal: To analyze future issues that will impact biodiversity conservation in Africa and help develop capabilities of USAID and African partners to address these issues.

Task H.1: Large-Scale Land Acquisition

In many African countries, there is a growing demand for land for high-value-chain commercial crops by large private, often foreign, companies. This task comprises activities to better understand and address the threat these large-scale land acquisitions (LSLAs) pose to people and biodiversity.

In FY2014, WRI researched the processes by which agricultural investors acquire community land in Tanzania and Mozambique. During the extension period, WRI will finalize its report on the findings and create associated communications materials. AWF began assessing the processes by which the government of Ethiopia allocates land, and examining the ecological and social impacts of such LSLAs, particularly on areas of conservation interest; the activity will be concluded during the extension period.

Task H.2: SMART Law Enforcement

Enforcement of laws and regulations aimed at conserving natural resources is weak in many African countries. One reason for this is a lack of skills, knowledge and motivation on the part of protected area staff and community rangers to plan and implement successful law enforcement actions. To this end, WCS, AWF, JGI, and WWF are training rangers in SMART, a user-friendly software tool to plan, implement, monitor, and adaptively manage ranger-based law enforcement patrols.

Among other FY2014 activities, the partners conducted a SMART technical training at the Southern African Wildlife College in South Africa, attended by participants from 17 African countries. African pilot sites for SMART increased from 24 in 2013 to 47 in 2014. For the remainder of the award, the partners plan to assess how SMART is being utilized to improve enforcement effectiveness and protected area management in 2014/2015 through a questionnaire, a lessons-learned workshop, and a best practices manual.

Task H.3: Western Indian Ocean Coastal Conservation

TNC's FY2014 highlights in this task include the organization's facilitation of the Western Indian Ocean Marine Spatial Planning (MSP) Steering Committee and its events. Outputs for the extension include a MSP design that integrates the interests of private-sector groups and biodiversity conservation. WCS's actions included leading a feasibility assessment of the proposed conservation trust fund for the Western Indian Ocean.

Task H.4: Faith and Conservation

The intersection of faith and conservation is an important element of the Dar Vision on the Future of Biodiversity in Africa, in which experts from throughout Africa came together to articulate multidimensional approaches to biodiversity conservation in Africa.

JGI in Uganda signed a memorandum of understanding with the Catholic Diocese of Fort Portal to conserve the Lake Nkuruba Nature Reserve in Uganda. With the United Kingdom-based Alliance of Religions and Conservation and the Uganda Faiths Network on Environmental Action, JGI also organized a faith-based environmental education workshop in Uganda in March 2014, assembling 120 participants from five African countries.

Pending activities for the extension period are an on-the-ground assessment of whether wildlife protection programs led by faith leaders significantly change public attitude and behaviors, and piloting of an education for sustainable development toolkit for teachers in Ugandan faith-based schools.

1

Introduction

This report details the work and accomplishments in Fiscal Year 2014 (FY2014) of the Africa Biodiversity Collaborative Group (ABCG), funded by the U.S. Agency for International Development's (USAID) Biodiversity Analysis and Technical Support (BATS) program.

The BATS program is a multi-partner USAID Bureau for Africa effort that has included International Resources Group (IRG) under the Environmental Policy and Institutional Governance Indefinite Quantity Contract (EPIQ II), the USDA Forest Service International Programs under an interagency agreement, Environmental Law Institute (ELI), the Capitalizing Knowledge, Connecting Communities (CK2C) project of new partner Development Alternatives, Incorporated (DAI) and the Africa Biodiversity Collaborative Group (ABCG)[1] under a cooperative agreement. While all groups had separate funding and work plans, the three entities met regularly with USAID to coordinate their activities. This report details the activities of the ABCG portion of the BATS program from October 2013 through September 2014.

ABOUT ABCG

ABCG is a coalition of the major United States-based international conservation non-governmental organizations (NGOs) with field-based activities in Africa: African Wildlife Foundation (AWF), Conservation International (CI), the Jane Goodall Institute (JGI), The Nature Conservancy (TNC), Wildlife Conservation Society (WCS), World Resources Institute (WRI) and World Wildlife Fund (WWF). ABCG has extensive experience conducting analysis of and sharing lessons learned about high-priority conservation issues affecting Africa. ABCG's mission is to tackle complex and changing conservation challenges by catalyzing and strengthening collaboration, and bringing the best resources from across a continuum of conservation organizations to effectively and efficiently work toward a vision of an African continent where natural resources and biodiversity are securely conserved in balance with sustained human livelihoods.

ABCG's objectives are to:

- Promote networking, awareness, information sharing and experience among U.S. conservation NGOs working in Africa;
- Encourage information exchange and idea sharing with African partners;

[1] Additional resources available online: www.abcg.org.

- Identify and analyze critical and/or emerging conservation issues in Africa as priorities for both future NGO action and donor support; and
- Synthesize collective lessons from field activities and share them with a broader multi-sector community in the United States and Africa.

By accessing the wide-ranging networks of our member organizations throughout Africa, ABCG is in a unique position to support USAID Africa Missions and help build the capacity of local and national NGOs, government agencies, universities, the private sector and local communities on environmental and development issues of key relevance on the African continent.

PROJECT OVERVIEW

Through BATS, ABCG received a two-year, $500,000 grant in 2008–2009 to provide technical support and share lessons learned to help the USAID Africa Bureau Office of Sustainable Development (AFR/SD), USAID's Africa Missions and local and national organizations in Africa increase their effectiveness in tackling major existing and emerging threats to Africa's biodiversity and contributing to sound development based on wise use of natural resources and maintenance of ecosystem services. Later, ABCG proposed and was awarded a five-year $2,500,000 extension to the BATS agreement for 2009–2014. In 2011, ABCG was invited to submit a $4,700,000 amendment to the BATS agreement, which USAID approved.

ABCG's work through BATS Award # RLA-A-00-07-00043 originally was intended to be completed by September 30, 2014, but due to unforeseen delays in fund obligations, a number of ABCG activities and deliverables were not completed by that date. Consequently, ABCG sought a no-cost extension of the award performance in order to complete its planned work. USAID approved a six-month award extension, until March 30, 2015. A provisional work plan of pending activities and deliverables is included herein, with anticipated completion dates. ABCG's final award synthesis report will include final technical and financial reporting on these pending activities and deliverables.

The BATS program develops practical documentation of USAID's biodiversity conservation experience and resulting best practices and policy considerations, describes extractive industries partnerships with conservation initiatives, provides technical assistance for biodiversity conservation programs in conflict and crisis states and highlights governance issues, conducts biodiversity and tropical forestry country-level assessments, and identifies and conducts analysis and outreach on emerging African conservation issues.

This project serves as a support facility to meet mission and partner needs in:

- Reviewing USAID/Africa's conservation history, lessons learned, and way forward (Task A);
- Managing extractive industry alliances for environmental gain (Task B);
- Addressing biodiversity conservation in states vulnerable to crisis, in crisis, or recovering from crisis (Task C);

- Supporting country-level 118/119 biodiversity and tropical forestry assessments, including threats, analysis, and actions necessary for biodiversity conservation (Task D);
- Supporting scaling up integration in land use planning as means to ensure a more comprehensive farming systems approaches linked to natural resources management with a focus on ecoagriculture, including bushmeat as an important element of incorporating protein into food security (Task E);
- Investigating multiple approaches to global climate change, including scaling up climate change adaptation, evaluating tradeoffs in climate planning in woodlands ecosystems, improving grazing practices linked to carbon sequestration in grasslands, and scaling up clean energy practices (Task F);
- Equipping governments, NGOs and partners to better address the intersections of global health challenges and biodiversity (Task G);
- Forecasting future conservation needs and opportunities in Africa by identifying selected critical and/or emerging conservation issues and linkages in Africa as priorities for future USAID and donor support in order to better prepare the conservation sector and in some cases follow up directly or catalyze actions by others (Task H); and
- Conducting continued outreach on BATS products.

FISCAL YEAR 2014 ACCOMPLISHMENTS

(*NB: hyperlinks throughout this report open documents posted on the ABCG website; in the main text of this report, links will open full documents included in the report folder. If using Adobe Reader, you can open cross-pdf documents in a new window: Go to* Edit⇒Preferences⇒Documents⇒Open Settings: *uncheck* 'Open cross-document links in same window'.)

- **Large thematic meetings and events,** including:
  a) On the Wings of Robots: The Ups and Downs of Using UAVs for Conservation
  b) Highlights from the Integrated Freshwater Conservation and WASH M&E Workshop

- **Twelve brown bag talks,** and other events on various aspects of conservation. A full list is in Section 10 of this report. We continue to develop discussions to engage ABCG members and partners in addressing emerging and high-priority issues affecting biodiversity in Africa.

- **Research, Reports and Analysis:**

  More than 35 research- and review-based reports were produced. All reports are listed in the Appendix "Research, Reports and Analysis".

- **Maps:**
  - Figure 1. Revised land cover and forest types based on analysis of forest inventory data MBG sampling data
  - Figure 2. Identification of range of community based values including 'Community needs' and 'Cultural values' areas in the Grande Mayumba landscape in Gabon
  - Figure 5. Map of the proposed LAFR's—Masito LAFR, Uvinza District
  - Figure 6. Map of the proposed LAFR's—Tongwe West LAFR, Mpanda District
  - Figure 9. Exposure of restricted-range terrestrial bird species to the direct impacts and human response to climate change
  - Figure 11. Priority areas for conservation priorities identified to avoid areas of high human influence today areas likely to be the focus of future agricultural expansion

- **Workshops:**
  - Equipping Conservation Groups to Mitigate HIV and AIDS in the Workplace
  - Informed land use decision making with the Marxan Decision Support Tool
  - Drafting an Integrated Monitoring and Evaluation Framework for Freshwater Conservation and WASH
  - The SMART Partnership: Training of Trainers Builds Capacity for Adaptive Conservation Protection

2

Task A: Dar Vision for the Future of Biodiversity in Africa

In the first phase of BATS, ABCG members contributed significantly to the learning of lessons from 30 years of USAID/Africa's biodiversity conservation initiatives.

In fiscal year (FY) 2014, ABCG did not conduct activities in this task, deciding instead to reallocate effort to other tasks, due mainly to funding constraints.

The Dar Vision for the Future of Biodiversity in Africa nevertheless continues to be a critically important framework for ABCG's work. The Dar Vision is referenced in every ABCG brown bag, meeting and workshop.

By 2025, environmental degradation and biodiversity loss in Africa have been significantly slowed, people and nature are adapting to climate change, and species and ecosystem services are providing a foundation for human welfare in a society committed to sustainable economic development and equitable sharing of natural resource benefits.
…there are also opportunities which we must seize, building on existing successful approaches to biodiversity conservation as well as new innovation, to take urgent and renewed action. For the great majority of Africans, biodiversity represents the only lifeline that can no longer be ignored.

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Task B: Managing Extractive Industries to Protect Biodiversity

Goal:

To provide analysis, outreach, and capacity building on ways to reduce biodiversity impacts from extractive industries in order to increase USAID and its partners' access to sound guidance and hence lessen the effects on biodiversity of future investments in the major extractive industries.

> **Enhance greater accountability for sustaining biodiversity and ecosystem services by private sector institutions (including developing alternatives; promoting fuel efficiency and alternative energy sources; and limiting pressure on freshwater sources through more efficient uses of water) (Dar Vision 2008)**

While extractive industries offer great economic benefits to Africa, they have direct and indirect impacts on biodiversity, air, water, soil, and people. Direct impacts of mining and oil/gas extraction include: deforestation and habitat destruction, alteration of flow regimes and water quality in wetlands through water extraction and pollution from tailings and dumping of wastes. Extraction of forest, fish, and soil and water resources (e.g., through industrial agriculture for global markets, a growing problem) has the potential to result in wide-scale land use/land cover change, with concomitant risks of erosion, degradation of watersheds, depletion of water necessary for environmental flows, and ancillary pollution (e.g., through the use of fertilizers and agricultural chemicals).

Indirect impacts of extractive industries include increased access to undeveloped areas leading to immigration and new settlements; introduction of non-native species; and new markets for illegal logging, ivory and bushmeat trade. The soils of the Congo Basin, and in particular those of the DRC, contain very important mineral resources. These resources provide significant revenues for the region's (very poor) countries. The impact of mining on the Congo Basin is growing. High mineral prices and demand are encouraging the development of mineral deposits, including some previously unviable. And companies are increasingly willing to invest substantial resources into developing mineral fields. In order for these projects to be viable, they need to be accompanied by major infrastructure constructions, such as roads, railway lines, dams and power stations.

B.1 MINING AND BIODIVERSITY IN THE DRC

For FY2014, ABCG focused effort on other Tasks while deferring B.1 activities until funding to pursue issues or opportunities under this theme were availed at a future date.

B.2 HIGH CONSERVATION VALUE FOREST ASSESSMENTS

Background

With the current scramble for natural resources in Africa, the expansion of industrial activities (palm oil, industrial-scale agriculture, logging, transport infrastructure and mining) is an increasing threat to biodiversity. These impacts can be reduced or prevented by a careful process of land use planning that identifies sensitive areas. The High Conservation Value approach identifies types of high conservation values and provides guidelines for how they should be evaluated.

The concept of a High Conversation Value (HCV) forest emerged over 15 years ago within forestry management and has been used as a tool for individual land owners/concessionaires to identify and protect attributes of outstanding conservation value on concession level. The HCV concept, originally developed by the Forest Stewardship Council (FSC), guided companies towards identifying areas of particular conservation value (for biodiversity, ecosystem services, local livelihoods) and the management of those areas to ensure the continued provision of those values. The delineation of HCV areas gained momentum within the industry and nineteen countries have produced guidance documents on the process for identifying HCV areas. This has typically been a bottom-up process, where companies have used their own data to define conservation priorities at the concession level in the absence of agreed national conservation priorities or planning frameworks. With progress at the national level in systematically identifying conservation objectives and priority areas to achieve those objectives, industry led initiatives like HCV will need to integrate these objectives. Ideally concession-level HCV analysis will compliment national conservation priorities, and the areas identified and values managed for at the concession level must collectively contribute to and achieve the national conservation objectives.

However, application of the HCV approach in Africa is problematic because in many areas there is a lack of accurate data on flora and fauna, limited experience in conservation planning, and no consensus on how to set thresholds of significance consistent with the concept of High Conservation Value.

Such information is important for both the conservation community and extractive industries. The HCV approach is referred to by the major certification schemes (e.g. FSC, RSPO & CCBA) and leading development bank safeguards (e.g. IFC Performance Standard 6). In Gabon the National Parks Network is considering using the HCV approach to identify 'sensitive areas' of park buffer zones and this approach could also be used at a larger scale to identify biodiversity sensitive areas in a regional or national land use planning process.

Overview of Achievements

For the past two years ABCG partners at Conservation International (CI), the Wildlife Conservation Society (WCS) and the World Wildlife Fund (WWF) have been working to generate national data sets that can be used to define national priorities, and novel methodologies to identify HCV areas at the concession level, integrating broader scale conservation priorities.

If the HCV approach is to be effective in orienting development decisions to maximize retention of biodiversity, the application of the approach needs to be better informed by:

- Scientifically robust and transparent mapping of basic biodiversity parameters
- Experience from implementation in other countries (e.g. other national toolkits) and from
- The lessons from international standards (e.g., IFC Performance Standard 6, IUCN Best Practice Guidelines)

The first year of the project focused on preparing the ground, and building the basic data building blocks for decision making. Four themes were selected for analysis, as follows

- Large mammal distribution and abundance
- Endemic plant hotspots
- Forest habitat type mapping
- Aquatic biodiversity

Work in year one focused on elephants and endemic plants initial mapping approaches for HCV thresholds were developed and tested.

The second year of the project saw significant advances in the analysis and mapping of all themes. Elephant density and abundance maps, based on the now published results (Maisels et al. 2013), were refined and initial analysis of conservation tradeoffs and costs was completed. A similar approach was tested for great apes. Priority maps for endemic plant hotspots were re-visited and statistical analysis of the endemic plant data was made to enable the classification of 3 endemic plant conservation zones. An approach to classifying forest habitat from forest company's inventory data was developed and tested using data from 14 companies. Sampling of aquatic biodiversity in Gabon's river systems was completed. Analysis of the data enabled initial mapping of aquatic biodiversity that could form the basis of a conservation prioritization.

In addition to the pre-existing themes from year one, an additional work module was added in year II on linking HCV identification and mapping to the use of the biodiversity offsets approach proposed by BBOP. A draft report on the appropriate metrics for biodiversity offsetting in Gabon has been produced, and is under review.

Activities and Outcomes:

The 2014 work plan focused on the second objective, integrating broader scale conservation priorities with landscape scale features to delineate optimal conservation set-asides around HCV areas. The case study focused on the "Grande Maymuba Landscape", a 6,200 km^2 concession managed by the Grand

Mayumba Development Company (GMDC), with a variety of land uses (Figure 1). The approach uses user-defined priorities and objectives for conservation of biodiversity and ecosystem values, as well as data on the potential profitability of timber extraction from the area, to inform identification of HCV and conservation set asides (see Figure 2). The case study is intended to provide a mode of HCV identification and mapping, making use of the data collected and analytical techniques developed for this project. Highlights from the 2014 work plan include:

- Refinement of regional maps for elephants (*Loxodonta cyclotis*), chimpanzees (*Pan troglodytes*) and gorillas (*Gorilla gorilla gorilla*) based on newly updated models for chimpanzees and gorillas, and higher resolution distribution model for elephants. In addition to new model data, the delineation of candidate HCV areas in the concession for each reflected incorporation of locally important criteria, including ensuring connectivity with populations protected in Conkouati-Douli National Park.
- Work session convened in Libreville in June 2014 with Missouri Botanic Garden (MBG), SFM Africa Ltd. and WCS to trial the methodology developed for the identification of HCV areas inside a 6,200 km^2 forestry concession located near Mayumba National Park in southern Gabon. The concession operator, GMDC is committed to sustainable development and is currently in process of developing a management plan for the concession. During the workshop the available data and proposed methodology were reviewed and a refined land-cover map for the SFM concession was developed using novel ordination technique on forest inventory data to improve differentiation of forest types.
- Refined range maps for the distribution of threatened mammal, bird, and amphibian species. Threatened species were defined as those identified on the IUCN Red List as Critically Endangered, Endangered, or Vulnerable.
- In conjunction with MBG a preliminary "Redlist" assessment for flora thought to be endemic to the region was performed to identify species that would qualify for HCV 1. Refined range maps "redlisted" floral species were produced using the refined land-cover map and habitat it preferences defined by compilation of biodiversity, ecosystem service, and socio economic data in a spatially explicit database (Marxan)[1] for landscape scale analysis of conservation options.
- Preliminary assessment of high conservation value areas and candidate set aside areas for the Grande Mayumba landscape.

[1] The Marxan decision support tool (Ball, Possingham, and Watts 2009), is a spatial optimization tool which has been used around the world to identify priority areas for conservation (Airame et al. 2003; Fernandes et al. 2005; Watson et al. 2011). Marxan uses simulated annealing to identify multiple good options that solve the "minimum set" problem; the identification of a set of areas that achieve a set of defined objectives while minimizing the overall cost of achieving those objectives (Cocks and Baird 1989). Marxan is a spatially explicit optimization tool, that was designed to account for the heterogeneous cost of conservation action within the landscape, and identify areas where conservation objectives can be achieved most efficiently (Ball, Possingham, and Watts 2009; Game and Grantham 2008).
Source: *Trade-offs in conservation area design: A case study from the Murchison Semliki landscape in Uganda*

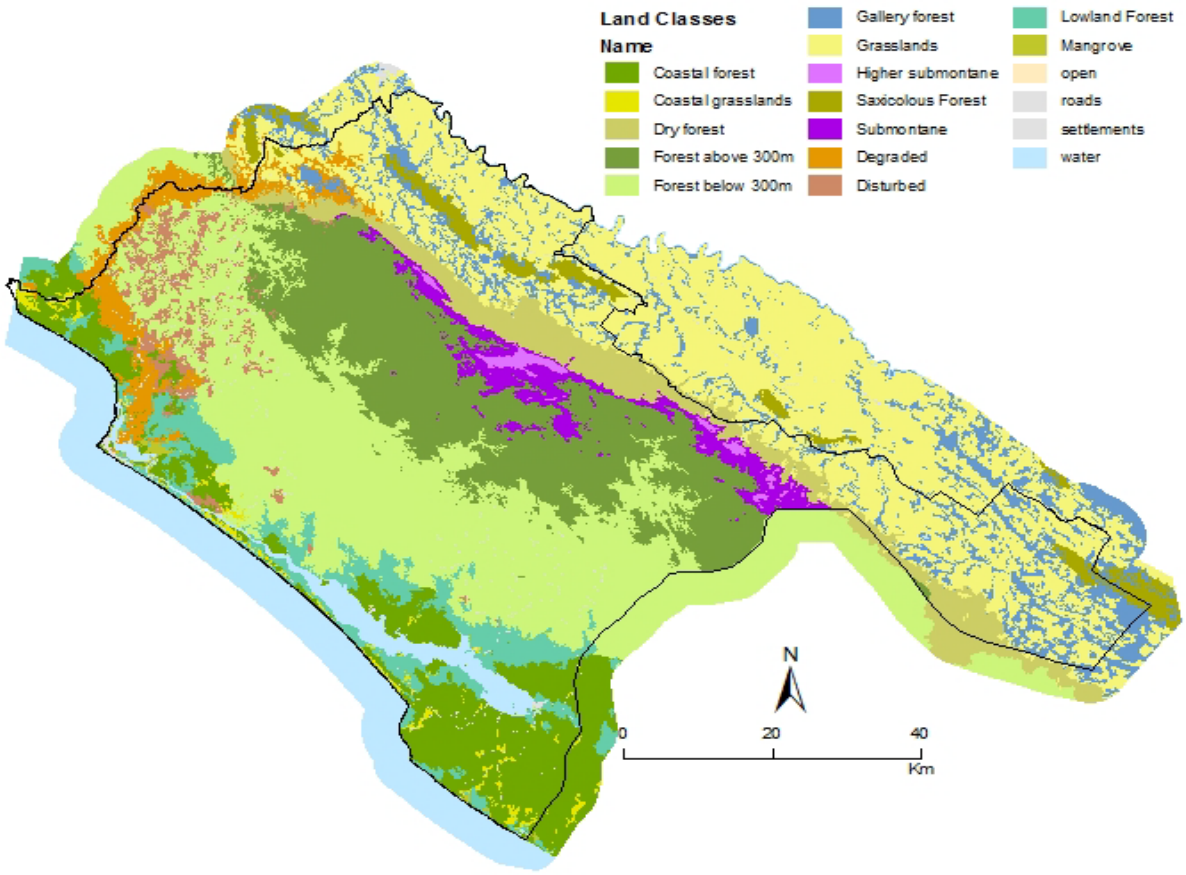

Figure 1. Revised land cover and forest types based on analysis of forest inventory data MBG sampling data.

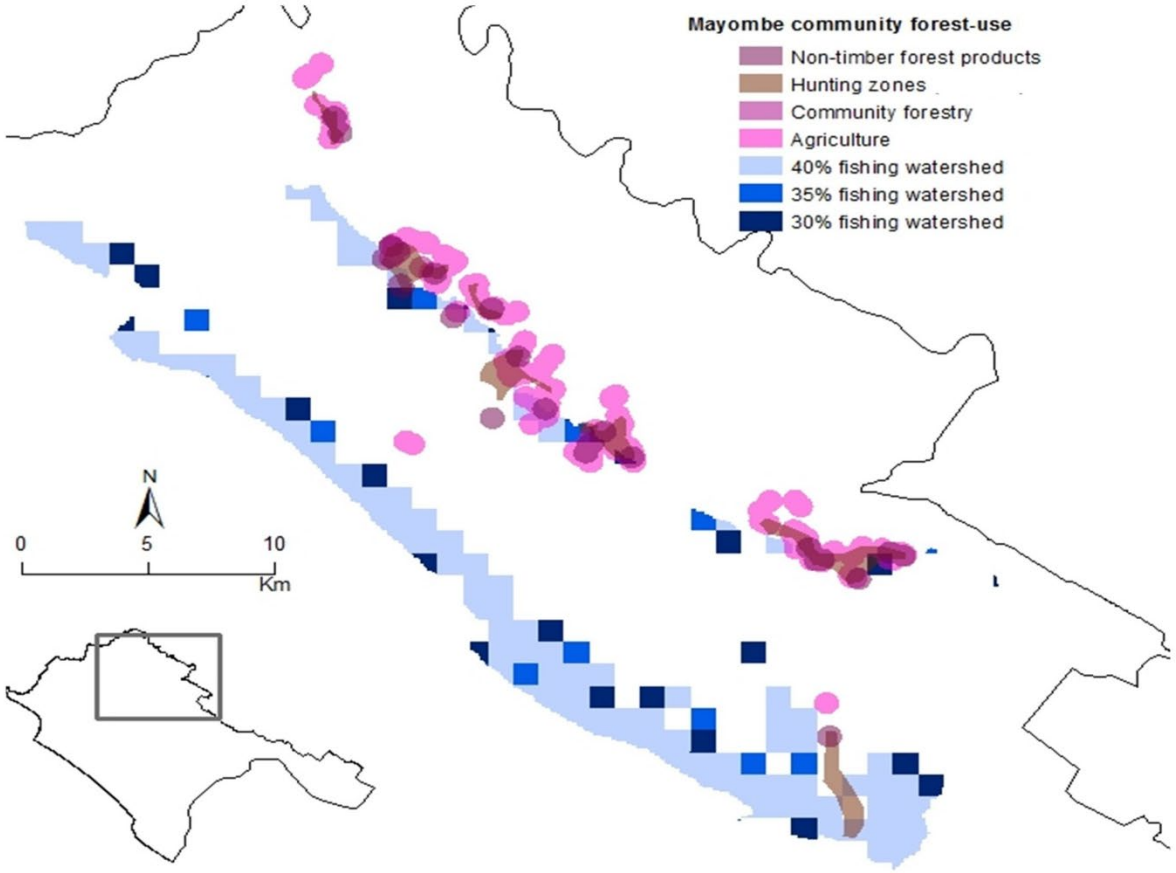

Figure 2. Identification of range of community based values of areas in the Grande Mayumba landscape in Gabon.
Note: Community consultation was used to identify and map uses. The identified values include collection of non-timber forest products, areas utilized for hunting, fishing area, and community forestry.

Ongoing Efforts

As with several ABCG FY2014 tasks, work continues to be accomplished under the BATS–ABCG Agreement extension to complete activities as a result of a compressed fiscal year. The following is a list of pending output and status description. Similar explanatory notes will be presented in a provisional FY2014 extension work plan included in this report appendix.

Large mammal mapping updates

Refinement of regional maps for elephants (*Loxodonta cyclotis*), chimpanzees (*Pan troglodytes*) and gorillas (*Gorilla gorilla gorilla*) based on newly updated models for chimpanzees and gorillas, and higher resolution distribution model for elephants, are underway. In addition to new model data, the delineation of candidate HCV areas in the concession for each will reflect incorporation of locally important criteria, including ensuring connectivity with populations protected in Conkouati–Douli National Park.

Exploit maps in landscape analysis SW Gabon

Landscape analysis is the advanced stages; national data and priority areas have been combined with local features, test approaches to identifying HCV areas and optimal conservation set-aside areas at the concession level, with stakeholder feedback in the process.

Compilation of results and lessons learned and production of case study report for landscape case study

This will be produced on completion of the landscape study.

Policy brief on use of the data and the Aquatic biodiversity prioritization approaches

Currently an aquatic ecosystem Atlas for Gabon is being developed by TNC, which makes use of the fish data-base developed by WWF. A policy brief on prioritization will be developed following further discussions with TNC.

List of communication materials, briefing notes and reports to be produced, with responsibilities defined following technical work session

Hand-outs have been drafted on approaches to identifying national priority areas for apes and elephants. On completion of the landscape analysis, at least three briefing notes to be produced will cover: 1) Compiling reference data, 2) establishing thresholds for HCV, and 3) development of a spatial planning system.

Stakeholder workshop for final communication and results

A workshop is being developed to bring together government and other stakeholders to review the case study and the information collected in support of the process. The workshop is expected to occur by the end of March 2015.

4

Task C: Land Tenure, Rights & Governance

Goal:

The overall goal for this task is to promote sound governance and rights-based access to natural resources (promoting rights of local people, sharing benefits, engaging civil society, building capacity, ensuring stakeholder access to information and decision-making processes, empowering women, undertaking multi-sectoral approaches and partnerships, and promoting sound policy at all levels). Additionally, the task seeks to accomplish the following:

- To study and analyze new land management approaches and tools, the changing land policy regimes and the implications to conservation.
- To disseminate the research findings and policy/program recommendations, and to promote their adoption.
- To increase learning on land and natural resource tenure issues and promote more equitable policies and practices in Africa.
- To analyze property rights regimes in landscapes and how their impact on community engagement for successful conservation.
- Determine how land property/tenure rights can be secured for marginalized communities.

2.D. Promote sound governance and rights-based access (promoting rights of local people, sharing benefits, engaging civil building capacity, ensuring stakeholder access to information and decision-making processes, empowering women, undertaking multi-sectoral approaches and partnerships; and promoting sound policy at all levels) (Dar Vision 2008)

Background

To address the challenge of conserving biodiversity outside protected areas, conservation organizations have begun to assess the range of land and natural resource-use management tools on land outside the protected estate, especially on concessions, individual private property and community-managed common property, to achieve biodiversity conservation. Among these tools are zoning ordinances, environmental easements, land purchases and long-term leases, and measures to secure tenure for rural populations. Many of these approaches have yielded positive conservation outcomes in the U.S. and elsewhere and hold promise for wildlife management in Africa. The application of these new land use management tools and approaches on state- or private- held lands depends in large measure on the law and practice of land tenure and natural resource property rights in the individual countries.

Weak land and natural resource tenure governance adversely affects economic development, social stability and sustainable natural resource utilization. Conversely, sound governance engenders accountability, consistency and helps instill confidence in stakeholders (particularly agrarian rural communities) that their various land and resource use rights are recognized, thus enabling an attitude of stewardship for the land and biodiversity.

Overview of Achievements

For FY2014, accomplishments include the following.

African Wildlife Foundation

Allocation of land for different use is a significant challenge in Africa and has a bearing on conservation success. Land tenure is complicated by dual or even multiple use, access and ownership rights that are often in conflict. In the Zimbabwean context, the government Land Reform process has resulted in unplanned settlement and an environment of uncertainties for the wildlife conservation sector which became even more complex with the rolling out of provisions of the Indigenization and Economic Empowerment Act (IEEA) (Chapter 14:33) to the wildlife sector. Zimbabwe's South East Lowveld region has some of Africa's best wildlife conservancies that are habitat to the endangered black rhinos, wild dog, elephant and lion. The Save Valley Conservancy (SVC), formerly 320,000 hectares, is threatened by the reform process and various complications pertaining to the IEEA. SVC is one of only four conservancies left in the country. To address these challenges, the Government of Zimbabwe's Parks and Wildlife Management Authority requested AWF to help develop a model for conservancies that achieves indigenization, per the IEEA and ecological, social and economic sustainability, and to assess the Communal Areas Management Program for Indigenous Resources (CAMPFIRE) program and Zimbabwe protected areas, and advice on how to improve the viability of the conservation estates. This work commenced in 2010 and has progressed over the years to FY2014 when AWF sought to consolidate the engagement and start piloting some of the community conservancy models as per objectives outlined below.

Objectives

1. To develop a business model for Community, Public and Private Partnerships for wildlife land that would serve as a pilot for viable conservation and equitable benefit sharing with the community.
2. Use the best practice pilot conservancies as a model for the national indigenization for the wildlife sector in Zimbabwe and other upcoming African democracies that will foster co-existence between local communities, government and the private sector for sustainable conservation gains.

Activities

1. Refinement of AWF's proposed SVC model which would address the IIEA at property level for clustering various properties in the conservancy in order to maximize management and equity to adjacent communities;
2. Develop a proposal for presentation to relevant government line Ministries (Tourism, Environment, & Indigenization) for approval.

3. Conduct consultative workshops with communities in the five administrative districts surrounding Save Valley Conservancy, i.e. Buhera, Zaka, Bikita, Chiredzi, and Chipinge to articulate the community vision for engaging the SVC investors. (Refer to the vision from nine chiefs in five districts in the report titled *Position Statement on the Community Private Partnership: Community—Save Valley Conservancy Partnership*). AWF offered technical support for community meetings under the leadership of chiefs around the principles and concept of the SVC commercial model.
4. Facilitate establishment of legal structures and agreements.
5. Replicate recommended model in Matabeleland North and South Provinces.
6. Present findings & lessons learned and the overarching policy implications at the 2014 Annual World Bank Conference on Land and Poverty together with other ABCG members.

Outcomes and Deliverables

1. An updated business model was finalized and submitted to the Government of Zimbabwe in the first quarter of FY2014, titled *Zimbabwe Parks and Wildlife Management Authority: Commercial Revenue Model Assessment*. The document presents recommendations for legal structures and agreements including an evaluation framework and tender guidelines for tourism development projects.
2. Several meetings with the Hon. Minister of Environment, Water and Climate were held to present findings of the proposed SVC model and *Zimbabwe Parks and Wildlife Management Authority: Commercial Revenue Model Assessment*, for approval.
3. A learning paper, titled *Status of Wildlife and Conservation Areas in Zimbabwe and Recommendations for Recovery* on findings & lessons learned from the work in Zimbabwe and the policy implications was shared at the 2014 Annual World Bank Conference on Land and Poverty. A second paper also presented at the same conference discussed the suite of land management tools being applied across Africa to secure land tenure to leverage conservation, titled *Using Innovative Land Conservation Tools in Africa to Protect Land, Enhance Resource Management and Improve Community Livelihoods* [see slide deck version here].
4. AWF provided advice to the Zimbabwe Parks and Wildlife Management Authority (ZPWMA) on SVC in preparation for the Parks Authority's concessioning of some of the SVC properties.

Ongoing Efforts

1. Implementation of the Ingwezi Community Conservancy in South-East Zimbabwe (Matabeleland South) commenced and funds are being sought to operationalize. This conservancy is using the model and lessons learned from SVC and would be the first wholly local community owned conservancy in Zimbabwe.
2. Replication of model in the Hwange and Gwayi areas in Matabeleland North and South Provinces is on track and ongoing with AWF using other resources. Development of the Hwange National Park General Management Plan is underway and set to be complete by March 2015. This activity serves as the anchor around which neighboring communities will be engaged to develop conservancies in partnerships that are recommended in the commercial model development for Save Valley Conservancy.

World Resources Institute

In the final year of Task C, WRI committed to work on documentation of all or most significant Task C findings implemented by JGI and other ABCG partners.

Activities

In FY2014, WRI spearheaded the production of two short animated videos of significant Task C findings from previous years. Part of ABCG's larger communications strategy, the videos provide another means of sharing the Task C research findings, lessons learned and recommendations.

Outcomes & Deliverables

WRI has produced a number of short animated videos over the last couple of years, each addressing a critical issue addressed by Task C participating ABCG members. Three videos have been produced and released, a fourth will be finalized and released during the no-cost extension period, and a fifth will be published after the conclusion of FY2014 activities. Each video is posted on WRI's website (www.writ.org) and on YouTube (www.youtube.com) and is available in multiple languages. A few videos have been highlighted by other media and have been cross-posted on their websites such as *26 Films Every Food Activist Must Watch*.

The currently available videos are:

A Farmer in Africa: Restricting Property Rights, published in FY2013 with an accompanying blog published by WRI titled *Without Land, What Would a Farmer Do?* This video addresses the Task C issue of private land use restrictions.

A Farmer in Africa: Overlapping Property Rights, with an accompanying blog article published by WRI titled *Overlapping Land and Natural Resource Rights Creates Conflict in Africa*. This video discusses the Task C issue of overlapping land and natural resource property rights.

A Farmer in Africa: Balancing Property Rights With National Needs, with an accompanying blog article published by WRI titled *A Farmer In Africa: Balancing Property Rights With National Needs*. This video addresses the issues the Task C issue of expropriation for public interest purposes.

Ongoing Efforts

A Farmer in Africa: Securing Property Rights. This video is now being finalized and will be released in the coming months. It speaks to the issue of documenting and formalizing customary tenure arrangements.

A Farmer in Africa: Exercising Property Rights. This video is still in the works. WRI has prepared a draft script ready for the illustration stage. The video speaks to the benefits of secure land rights. It will be available in mid-2015.

Jane Goodall Institute

Objectives

Funding under ABCG went into supporting the preparatory process for the development of a general management plan for the Local Authority Forestry Reserves (LAFR's) that were established in FY2013 with funding from USAID/Tanzania.

In FY2014, the objectives included:

- Laying a foundation that ensures that the local authority forest reserves established are operationalized for the sustainable management of the reserves and areas of high biodiversity value identified and protected.
- Prioritizing areas of high biodiversity within the local authority forest reserves through the use of Marxan
- Clarity on the engagement of communities in the Participatory Forest Management process by the district that sets the stage for the establishment of partnerships that identify mutual benefits for both district and villages in the monitoring and protection of LAFR.

Activities

Conduct training for all the district staff on the process of developing a general management plan, its importance as well as the follow-on steps of involving the communities through Participatory Forest Management.

Training on the development of a General Management Plan (GMP), as well as the steps in Participatory Forest Management (PFM), specifically Joint Forest Management (JFM), was conducted to the members of the steering committee on August 1st and 2nd, 2014. Twenty three (23) of the total 28 members of the steering committee from four districts of Kigoma, Uvinza, Nsimbo and Mpanda attended and included District Forest Officers (DFOs), District Lands, Natural Resources and Environment Officer (DLNREOs), District Environmental Management Officer (DEMOs), Regional Natural Resources Officer (RNRO), Regional Fisheries Officer (RFO), District Water Engineer (DWE) and Council legal Officers (CLOs). The training was facilitated by a consultant, Prof. Pius Yanda[1] from the University of Dar es Salaam.

A copy of the presentations can be downloaded in the following links:

- *Forest Management Planning (FMP) Process*
- *How to Establish Participatory Forest Management*
- *Understanding of the Two Concepts: Participatory Forest Management; Forest General Management Plan*

[1] http://nyererechairclimatechange.udsm.ac.tz/Yanda_CV_June_2011.pdf

The training intended to impart knowledge and show experiences to the participants about General Management Plans (GMP) and Participatory Forest Management (PFM) processes that applicable to Tanzania. Facilitator started by differentiating the two concepts as applicable in forest management as General Forest Management Plan and PFM ("The arrangements for management that are negotiated by multiple stakeholders and are based on set of rights and privileges recognized by the government and widely accepted by resource users; and the process for sharing power among stakeholders to make decisions and exercise control over resource use."). The meaning, purpose and the seven steps for developing a GMP was presented and handouts and soft copies of the presentation were given to participants. The facilitator went on and gave types and details of PFM (both JFM and Community Based Forest Management—CBFM), and what would be applicable in the case of the LAFRs which is JFM with communities. The facilitator detailed the stages for successful implementation of JFM by giving concrete examples, statistics as well as the challenges in implementation from Tanzania.

Figure 3. Professor Pius Yanda facilitating training in Kigoma, Tanzania

After the training it was expected every district will come up with action plans for both, development of the GMP and plans to embark on JFM with villages surrounding the established LAFRs. The report, titled *Community Engagement in the Participatory Forest Management in Kigoma, Uvinza, Mpanda and Nsimbo Districts—Proceedings of the Workshop held in Kigoma Town*, was facilitated by Prof. Pius Z. Yanda.

Figure 4. Workshop training participants in Kigoma, Tanzania.

As a result of this training, on 23rd September 2014, Mpanda district organized a similar training to raise awareness of the councilors about the status, process and approaches they are going to use for GMP, and benefits to the districts and villages to be accrued from the establishment of the LAFR.

In the implementation of the above activities JGI worked with TNC (and FZS—the Frankfurt Zoological Society) to ensure that our work is synergistic and builds upon each other's work and share lessons for mutual benefit. A Steering Committee meeting was organized by TNC, JGI and FZS right before this training and JGI followed it with the GMP/PFM training, this way building on each other's efforts, enhancing our partnership, while also achieving cost and time savings in implementation.

Meetings held with representatives from two new districts—Nsimbo and Uvinza representatives to bring them up to speed on the work that has been implemented in establishing the LAFR's and their importance.

Discussions and meetings to bring the Uvinza District Council and Nsimbo District Council up to speed on ongoing efforts to establish LAFR's is ongoing. The proposed Masito LAFR and villages surrounding it fall, within Uvinza District and it is supposed to take over the process from the Kigoma District Council, own it and continue the finalization of the reserves, establishment of the GMP and implement follow-on JFM process with communities. Though most staff members were transferred from Kigoma District and are familiar with the process, a number of other team members are not. While the Uvinza District Council continues to support efforts by JGI and other stakeholders in the LAFR process, it has not yet shown leadership in these efforts, but JGI is hopeful this will happen in the

coming months. In Nsimbo District, while its administrative boundaries do not include the proposed Tongwe West LAFR, it does include Tongwe East Forest reserve, a key forest reserve that was part of Mpanda District previously. The forest resources and challenges to these resources from movement of people and cattle, make Nsimbo a key stakeholder in this process.

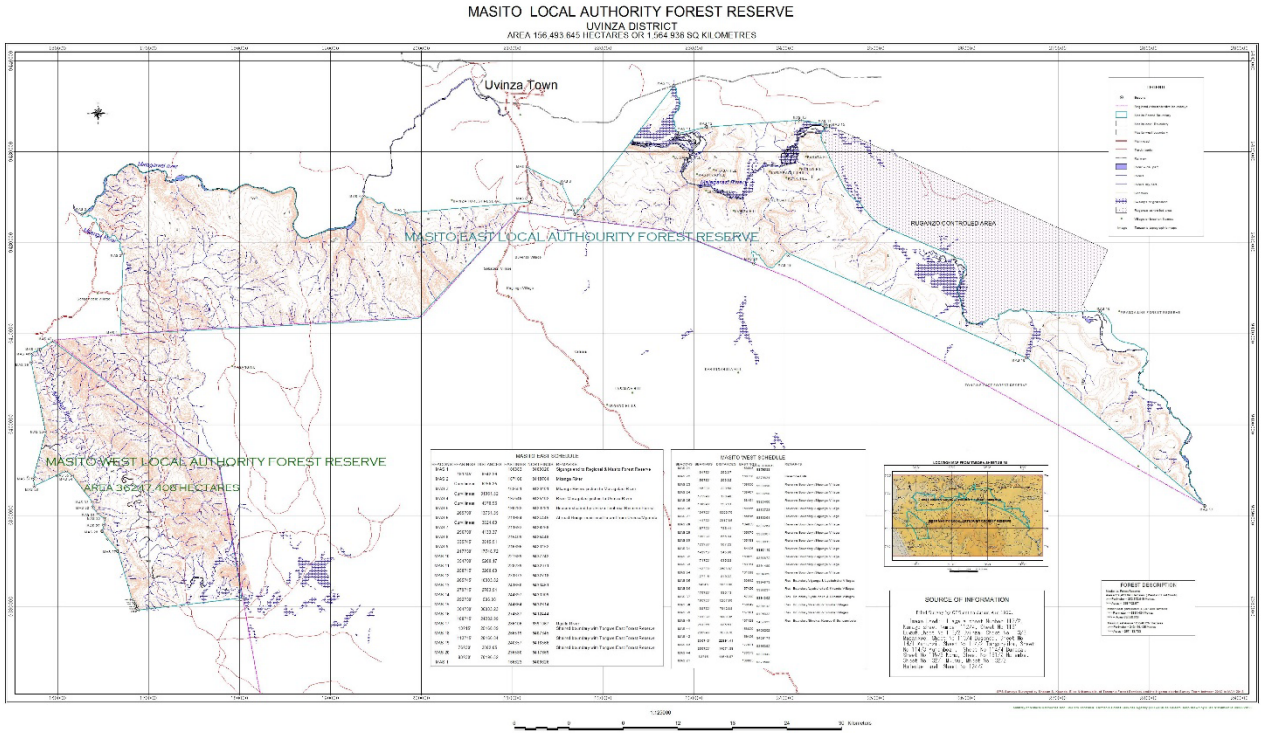

Figure 5. Map of the proposed LAFR's—Masito LAFR, Uvinza District (156,493.6ha).

A key activity held to bring the two districts in the loop of ongoing efforts and support them in taking on leadership, was the formulation of the inter district steering committee. A coordination meeting in which progress from districts, and challenges are brought forward and discussed took place between July 20th and 22nd 2014, facilitated by TNC, JGI and FZS. This activity was funded by ABCG with funding provided to TNC. Accordingly, details will be provided by them.


TONGWE L.A. PROPOSED FOREST RESERVE
MPANDA DISTRICT
MASITO EAST FOREST
TONGWE EAST FOREST
MASITO WEST FOREST
MISHAMO
Beacons_tongwe.shp
Village _ position name.shp
Hills name.shp
Regional boundaryshp.shp
Main roads.shp
Contours.shp
Secondary roads.shp
Tracks.shp
River_tongwe.shp
Tongwe west forest_shp.shp
Swamp.shp
Masito east_shp.shp
Masito west_.shp
Kilometers

Figure 6. Map of the proposed LAFR's—Tongwe West LAFR, Mpanda District (405,957.9ha).

Run Marxan so as to identify key areas within the LAFR's with high biodiversity value and should be protected with no off take of resources permitted (activity coordinated with the Marxan Task).

The plan was to implement the Marxan workshop in September 2014. This activity was not implemented as planned. This activity will take place during the extension period.

Through the use of Marxan (see Footnote 1 above) in identifying specific areas within the LAFR that are of high biodiversity value, local district staff and partners are to be introduced to the application of Marxan in prioritizing hotspots for conservation and understand how JGI and other partners are applying it. The information generated through this process will be incorporated into the master land use plan being developed for the Greater Mahale Ecosystem.

Deliverables

- Develop a map that identifies core areas within the LAFR's that are high in biodiversity and need to be conserved.
- Work plan for the development of the general management plan for two LAFRs:
  - With the help of the consultant who facilitated the training described in Activity 1, a framework for what action plans will entail was developed by the participants for modification when the district are ready to initiate development in the working months of the GMP and work with communities on JFM. Table 1 shows the action plan framework.
- Forest management training workshop report:
  - Training on the development of a General Management Plan (GMP), as well as the steps in Participatory Forest Management (PFM), specifically Joint forest Management (JFM), was conducted to the members of the steering committee on August 1st and 2nd, 2014.

Table 1. LAFR action Plan Framework

S/No	Action to be taken	Actors	Duration
1	Stakeholders analysis in village surrounding forests	District Officials with a facilitator/consultant	7 days for each district
2	Submission of request for user right to the Tanzania Forest Service	JGI through Regional Secretariats for Kigoma and Katavi region	
3	Signing joint agreements between the government and the villages surrounding the forests	JGI with support Regional Secretariats for Kigoma and Katavi region, and Tanzania Forest service	
4	Review of existing information as a basis for developing forest management units and consultations in respective districts	Facilitator/Consultant in collaboration with JGI and District Officials	30 days

S/No	Action to be taken	Actors	Duration
5	Preparation of forest management units	Facilitator/Consultant in collaboration with JGI and District Officials	20 days
6	Presentations of forest management units to the stakeholders in the respective districts for further inputs	Facilitator/Consultant in collaboration with JGI and District Officials	2 days in each district
7	Preparation of forest management plans (detailing forest management activities);	Facilitator/Consultant in collaboration with JGI and District Officials	10 days
8	Negotiation and signing of forest management agreements (specifying roles, responsibilities and rules)	Facilitator/Consultant in collaboration with JGI and District Officials	4 days in each district

Ongoing Efforts

- Develop a map that identifies core areas within the LAFR's that are high in biodiversity and need to be conserved.
    - This was not delivered as a result of the Marxan meeting not taking place, as discussed in above.

Further details on the ongoing efforts of bringing the Uvinza District Council and Nsimbo District Council up to speed on ongoing efforts to establish LAFR's will be reported in the coming months by TNC, JGI and FZS.

The Nature Conservancy

Introduction

ABCG provided fund to TNC in FY2014 in order to achieve the following objectives in the Greater Mahale Ecosystem (GME) which is a home to approximately 93% of Tanzania's 2,800 endangered chimpanzees as well as other threaten mammals such as elephants, eland and buffaloes. Although the original focus of TNC and Frankfurt Zoological Society (FZS) was the GME, it was considered important to collaborate on a larger regional scale with JGI and other key stakeholders, such as the regional government in Kigoma and Katavi that are involved in the conservation of the entire region. This larger scale includes several critical ecosystems such as Katavi National Park and its surrounding areas, the GME and the Greater Gombe Ecosystem where JGI has been working for many year. To achieve greater collaboration TNC helped form an inter-districts and regions Steering Committee called the Greater Katavi–Mahale–Gombe Ecosystems (GKMGE), which will coordinate and advance conservation of these critical ecosystems.

Objectives for the TNC component

The objectives for the TNC project for FY2014 were to:

- Support recruitment and orientation of additional GKMGE Steering Committee members
- Build the capacity of the GKMGE Steering Committee so that it understands its roles and responsibilities

- Train GKMGE Steering Committee members in the development process of an integrated Management Plan for the GKMGE
- Support the GKMGE Steering Committee to develop a fundable long term strategic plan for the GKMGE.

Key Activities accomplished

In order to achieve the aforesaid objectives, TNC in collaboration with its partners i.e. FZS and JGI implemented the following key activities during the period under review:-

GKMGE Steering Committee meeting

TNC collaborated with JGI and FZS to organize and support GKMGE Steering Committee members to conduct a two day meeting in Kigoma town from 17–18th July 2014. The meeting also included a flyover (using FZS small plane) of the GKMGE for District Commissioners and District Executive Directors from Kigoma and Katavi regions. The purpose of the flyover was to give them an opportunity to see the condition of the GKMGE and the threats currently facing these ecosystems, i.e. influx of pastoralists from neighboring regions and emergence of illegal settlements. The meeting realized a number of outputs which included election of the new Chairperson for the GKMGE Steering Committee, formation of a Secretariat that is now responsible for day to day functions of the Committee including organizing meetings and following up on implementation of agreed action points by the Steering Committee in each district and region. The meeting also reviewed and updated the Committee Terms of Reference, titled *Terms of Reference for the Greater Katavi Mahale Gombe—Ecosystem Technical Team*, and agreed to include representatives from District Medical Offices from all four participating districts of Kigoma Rural, Uvinza, Mpanda and Nsimbo as additional members of the Committee so as to advance integration of health issues such as sexual and reproductive health in conservation of natural resources and environment i.e. integration of Population Health and Environment (PHE).

Figure 7–a –b. Members of the GKMGE Steering Committee in a training workshop in Kasulu District in Kigoma

Development of a Strategic Plan for the GKMGE

Dr Alex Kisingo from the College of African Wildlife Management, Mweka was commissioned by TNC to support and facilitate the Steering Committee members to develop a fundable long term strategic plan for the GKMGE. The draft strategic plan was discussed at the training workshop held at the Kasulu Motel Conference facility in Kasulu district in Kigoma region on 13th and 14th October 2014, and

titled *The Greater Gombe Mahale Katavi Ecosystem: Long-term Strategic Plan for Greater Mahale Gombe Katavi Ecosystem*.

A total of 31 participants participated in the workshop, titled *GKMGE: Workshop Report for the Integrated Management Planning Training and Strategic Plan Presentation*. The workshop was organized by THE GGMKE Steering Committee with the support from TNC's TUUNGANE project. The workshop achieved the goals of discussing the first draft of the proposed Strategic Management Plan and providing a training on Integrated Management Planning to participants.

Participants were given opportunity to discuss and comment on the initial content of the plan. Dr. Kisingo continues to incorporate comments into the final document that will once again be shared with all Committee members before the fundraising event to be hosted by the Tanzanian Prime Minister. The fundraising event is likely to take place end of October or early November depending on the availability of the Prime Minister. Lengthy discussion was held to determine who exactly will manage the resources, and specifically the fund, which is an expected result from the fundraising event. Most of the Steering Committee members proposed that TNC be the interim custodian until the Committee is able to identify the most appropriate institution or structure to manage the fund and other resources which may be given the committee.

Figure 8. Committee members in discussion of the strategic plan under the leadership of Mary Mavanza—JGI Deputy Director of Program in Kigoma region

Key deliverables

Outlined below are key deliverables achieved by the project during the period under review.

- A functional GKMGE Steering Committee is in place with agreed (by all members) Terms of Reference and members know their roles and responsibilities (see *Terms of Reference for the Greater Katavi Mahale Gombe—Ecosystem Technical Team*).
- A GKMGE Steering Committee is now inclusive of all key stakeholders from all 4 participating districts from Kigoma and Katavi regions, as reported in the section above titled *GKMGE Steering Committee meeting*.

- The committee has agreed to include District Medical Officers as members of the committee in order advance integration of PHE issues in the GKMGE, as reported in the section above titled *GKMGE Steering Committee meeting*.

5

Task D: Support for Country 118/119 Tropical Forestry and Biodiversity Assessments

ABCG supports the 118/119 country-level assessments carried out by USGS Forest Service–International Programs by identifying relevant regional and national experts to assist with the assessments.

Task D will not include any continuing activities for FY2014 due to funding limitations in favor of other priority tasks.

ABCG looks forward to continuing to link relevant contacts in target countries to enable this important work to move forward.

6

Task E: Food Security

Task E did not include any continuing activities for FY2014 as plans called for termination after two years.

7

Task F: Addressing Global Climate Change through Adaptation and Actions in Woodlands, Grasslands and other Ecosystems

The conservation experts that developed the Dar Vision identified one of the key components of the vision as: promot[ing] climate change mitigation, and climate adaptation for biodiversity and people (including: ensuring Africa plays a significant role in climate change mitigation advocacy; keeping African greenhouse gas emissions low; linking carbon credit schemes to poverty alleviation and biodiversity conservation, integrating climate science in vulnerability assessments; undertaking disaster preparedness and mitigation efforts; ensuring multi-sectoral and multi-level collaboration and partnerships; and networking to share solutions).

The expected impacts of climate change include shifting rainfall patterns, rising temperatures, shifts in seasons, and sea level rise. The sectors that are most vulnerable to climate change in Africa include agriculture, water, and health; coastal areas and islands are expected to be heavily impacted. The Intergovernmental Panel on Climate Change projects crop productivity to be at very high risk to climate change in the long term (2080–2100) (IPCC 2014). Biodiversity impacts of climate change include shifts in species distribution and range, and the impacts of mitigation activities. Africa is particularly vulnerable to impacts of climate variability and change because of multiple stresses and low adaptive capacity, which threatens all aspects of the development agenda. Climate change is also closely tied to and has an impact on land use. Furthermore, in terms of biodiversity, there is increased vulnerability. There is also concern that existing protected area networks may not be adequate for biodiversity conservation in a time of changing climate. ABCG will use several approaches to addressing the impacts of climate change on biodiversity and human communities.

F.1 CLIMATE CHANGE ADAPTATION

Goal:

To mainstream human responses to climate change into conservation climate adaptation planning.

Background

Climate change, and its impacts on ecosystems and people, will likely be the biggest threat to biodiversity conservation in Africa in the 21st century. Conservation vulnerability assessments often focus only on the direct impact of climate change on biodiversity (e.g. range shift in response to higher temperatures or altered rainfall regimes). This narrow focus means that we may only be partially accounting for the true impact of climate change. Human populations are also responding to climate

change and will continue to respond to reduce their vulnerability and take advantage of new opportunities that climate change creates. The impact these changes in human behavior have on biodiversity are the "indirect impacts" of climate change, and understanding them is essential to identifying effective and appropriate conservation interventions. Integrating these changed human behaviors into conservation planning requires greater understanding of how and why people are responding.

The IPCC WG2 AR5 (IPCC 2014) report states, “Indigenous, local, and traditional knowledge systems and practices, including indigenous peoples’ holistic view of community and environment, are a major resource for adapting to climate change, but these have not been used consistently in existing adaptation efforts. Integrating such forms of knowledge with existing practices increases the effectiveness of adaptation.” Human populations are responding through anticipatory, planned, reactive and autonomous adaptation. While government responses to climate change are captured in policy documents like *Informing an Effective Response to Climate Change* (National Research Council 2010), individuals’ decisions, and how these impact biodiversity, are less well documented and understood. The group identified understanding and learning from individuals’ and communities’ past and present responses to climate variability as critical to planning future conservation efforts.

For the past four years, ABCG members CI, TNC, WCS, and WWF have collaborated to bridge existing knowledge gaps in adaptation. For FY2014, our efforts were divided into two main activities, as described below.

Methods

Activity A:

In FY13 the group developed a methodology and published a white paper on integrating human response to climate change into conservation vulnerability assessments. The work demonstrated that integrating human response alters our assessment of climate change vulnerability and has implications for where and how we work. To maximize the reach and policy impact of the work, the group decided to draft a manuscript for publication in a peer-reviewed journal to fill a void in the academic literature.

Activity B:

To increase the understanding of human responses to climate change, the group designed a data-collection template and conducted a series of key informant and focus group interviews around the following questions:

1) Have you noticed any changes in the environment? Over what time period?
2) To what do you attribute these changes?
3) What are the effects of these changes, and when are you most affected?
4) How have you coped with extreme events or other sudden and unexpected change and what has been the effectiveness and consequences of your responses?
5) Are there any barriers to adaptation? What might you have done differently with external assistance and resources?
6) Is there any evidence of impacts (from communities or otherwise) on local wildlife and ecosystems in general, particularly as a result of your response to the changes in the environment?

Accomplishment of Major tasks for FY 2014

Activity A:

- Revised the analysis underpinning the integration of the human response to climate change into conservation planning to address concerns raised in the FY13 whitepaper. This included refining the exposure metric and removing the ecoregion analysis.
- Engagement with Birdlife International, now a co-author on the human response manuscript, to provide content for the interpretation of the Important Bird Area (IBA) results.
- Completed draft scientific paper on the integration of the human response, submitted to *Diversity and Distributions* in November 2014. The article abstract is found in the appendix under '*Climate Change Adaptation Activity A*'.
- Whereas the work plan called for public outreach of the article '*Considering the human response to climate change significantly changes the outcome of site-based and species vulnerability assessments*' upon publication, and due to delays in the start of activities, the working group took the opportunity to present pre-publication findings at key events, and to eventually conduct further outreach once published, including writing an op-ed piece for a major newspaper. James Watson presented the work on integrating the human response to climate change into conservation planning at work at three international conferences in 2014:
    - British Ecological Society 2014 Annual symposium: Conservation (University of Kent, UK. 25–27 June 2014)
    - Society of Conservation Biology Oceana 2014 (Suva, Fiji. 9–11 July 2014).
    - Society of Conservation Biology Asia (Melaka, Malaysia. 19–22 August 2014)

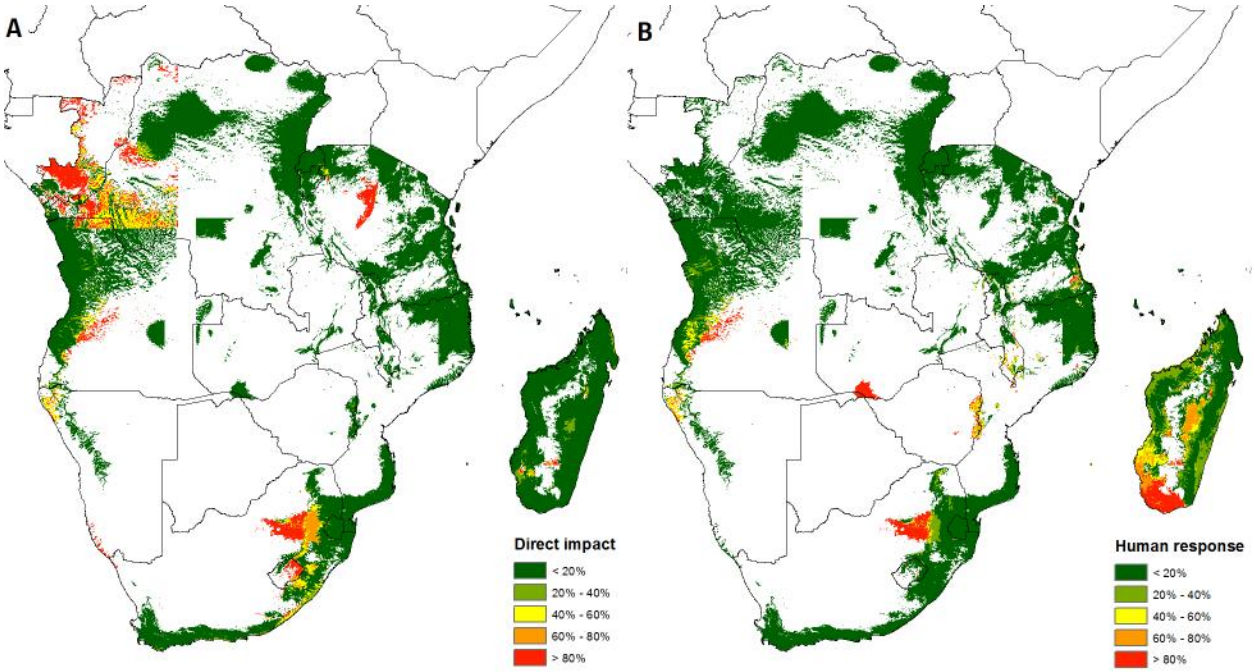

Figure 9. Exposure of restricted-range terrestrial bird species to the direct impacts and human response to climate change. **Note:** A) Proportion of species in an area identified as at the highest exposure to the direct impact of climate change. B) Proportion of species identified as at the highest level of exposure to the human response to climate change

Activity B:

- Interviews were conducted and data collected in the following sites, which were chosen to cover a broad geography, as well as diverse livelihoods:
  - Kyarumba, Uganda (WWF)
  - Mabira forest, Uganda (WWF)
  - Gabon (WCS)
  - Tanzania (TNC)
  - Madagascar (CI)
- Development and piloting of research template and method: The data collection template, titled *Questionnaire documenting unplanned human responses to changes in weather and climate, and subsequent impacts on biodiversity*, was designed primarily for key informant interviews, but was also used in focus group interviews. WWF piloted the prototype in western Uganda using both these methods.
- Analysis of peer-reviewed and grey literature on research and anecdotal evidence of unplanned responses to climate change: This activity is ongoing, and currently exists as a database: *Human adaptation strategies to climate change—Lit review*. We feel this is a more useful and accessible format than the originally proposed synthesis report. The database will serve as a very useful source of best practices for adaptation.
- Data review/analysis of key informant and focus group interviews: This activity is ongoing, and currently exists as a database: *Human Responses to climate change—Interview Data*. We covered a wide geography in our data collection effort, a diversity of livelihoods, and responses to a variety of climate impacts. Highlights of this work include:

- Uganda: Planting trees and moving settlements away from the river bank, as a response to increased flooding.
- Tanzania: Changing crop planting dates to follow shifts in rainfall seasonality.
- Gabon: Fishermen seek other sources of revenue due to a hotter wet season.
- Madagascar: Changing crops due to increased irregularity of rainfall.

Figure 10. Field survey work assessing how people are respond to climate change.
Note: a) Respondent explains the impact of recent flood in Kasese district Uganda, b) Interviewer and respondent in Iguela, Gabon.

Ongoing Efforts

Activity A:

- Submission of manuscript to *Diversity and Distributions* in November 2014.
- Draft an op-ed piece to raise awareness after manuscript is accepted for publication.

Activity B:

- Complete analysis of peer-reviewed and grey literature, as well as analysis of key informant/focus group interviews. We will have a meeting within the next month to discuss how best to analyze the data further, with the intention that this task will be complete by end December 2014.
- A brief case study summarizing the methodology will be developed, and used in combination with the data for outreach. We intend to complete this task by end January 2015.
- Communications and outreach for this work will likely begin once we have all the data analyzed and a case study developed. We will use the various channels of all partner organizations to promote this work. This will likely begin at the end of January 2015.

- Workshop: Originally proposed as a workshop with stakeholders in Africa, given time and funding constraints, this will instead be conducted in Washington DC. It will be used to discuss findings, how to effectively use them in conservation planning efforts, and how best to move forward with this project in the next two to three years. We intend to hold the workshop during the last week of February 2015.

F.3 WOODLANDS, TRADE-OFFS AND CLIMATE CHANGE

Goal:

To provide case studies of how to integrate the objectives of climate change mitigation, climate change adaptation, and biodiversity for REDD+ project developers, government stakeholders and planners in African countries with substantial woodlands, and the funders of Climate change (adaptation and mitigation) in Africa such as USAID.

Background and Overview of Achievements

In a world of limited resources, conservation managers and planners are forced to make trade-offs when deciding what to conserve and where. These decisions are complex and complicated: they frequently involve multiple stakeholders with different priorities, and occur against the backdrop of prior land use decisions, many of which were short-sighted and yielded suboptimal outcomes. To assist managers in addressing these resource allocation problems, decision support tools have been developed. Marxan is one such tool (Ball, Possingham, and Watts 2009). A freely available conservation planning software, Marxan enables users to conduct spatially explicit trade-off analysis. Marxan is used worldwide to identify critical areas for conservation which minimize the impact of conservation decisions on stakeholders. Marxan can also assess trade-offs between competing objectives, or identify where offsets for development impacts (e.g. forestry, farming etc.) would best be sited.

This task seeks to improve land use decision-making by bringing together stakeholders and providing them with quality data about their landscape and its natural resources, and enabling stakeholders to integrate that data into the decision-making process, with the goal of identifying and prioritizing areas for conservation and mitigation gains that maximize return on limited conservation and REDD+ resources, and minimize the opportunity cost of conservation. To conduct the activity, WCS, AWF, and JGI each identified a landscape where the organization was working characterized by complex trade-offs in resource decisions. The landscapes selected were Murchison Falls/Semliki landscape, Uganda (WCS); Kilimanjaro landscape, Kenya (AWF); and Masito–Ugalla Ecosystem, Tanzania (JGI). The partners together developed and tested a decision framework allowing planners to integrate the objectives of climate change mitigation, climate change adaptation, biodiversity conservation, and economic development into landscape-level planning. Project engagement utilizes a two workshop format. The initial workshop was designed to introduce conservation managers, planners, members of the development community, and government representatives to these relatively new tools and methodology, and how they can be used to make better decisions for all concerned. Attendees reviewed input data, provided insight into the compatibility between different uses and suggested objectives for conservation and socio-economic targets. The initial workshop for the Murchison

Falls/Semliki landscape was held in FY2012, and the initial workshops for the Kilimanjaro landscape and Masito–Ugalla landscape were held in FY2013.

Building on the first workshop and the expert advice elicited, the analysis for each landscape was then refined into a set of scenarios for decision making. These scenarios represent different future landscape configurations and differ in the extent to which conservation, carbon under REDD+, economic development and robustness to climate change represented in the landscape. The scenarios and analysis efficiently allocate conservation resources across the landscape and identify trade-offs between conservation and other objectives where they occur. The findings and analysis are presented to stakeholders in each landscape at a second workshop designed to disseminate results; solicit recommendations for maximizing the impact of the work either through further refinement of the analysis; and develop a communications strategy. Project work was initiated in FY2012, with the second workshop in the Murchison Falls/Semliki landscape being held in FY13. The second workshop for the Kilimanjaro landscape and Masito–Ugalla landscapes occurred in FY2014.

Highlights from FY2014 include:

- Refining models of the Kilimanjaro Landscape (AWF) to reflect species response to climatic events, like droughts, which are forecast to become more prevalent. Developing a new Marxan database and refining analysis for the Kilimanjaro landscape.
- Second workshop in Kilimanjaro Landscape (AWF) in Nairobi (June 19–20, 2014), bringing together more than 20 representatives from government, industry, donor, NGO, and academic institutions to present findings from the refined analysis and discuss communication strategy. The workshop is summarized in the report *Using Marxan as a tool to make scientifically sound decisions considering trade-offs involving conservation actions and development under climate change: A Case Study from the Kilimanjaro Ecosystem, Kenya/Tanzania*.

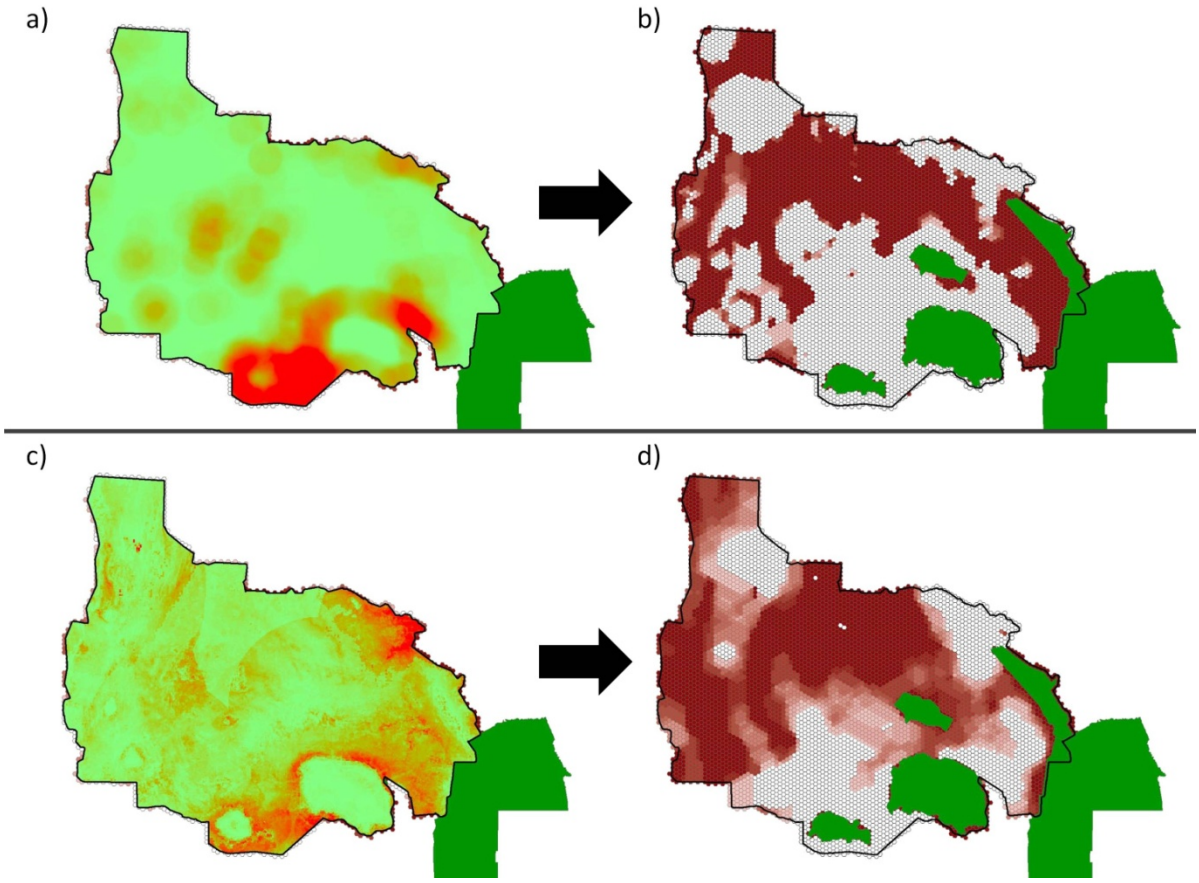

Figure 11. Priority areas for conservation priorities identified to avoid areas of high human influence today areas likely to be the focus of future agricultural expansion.
Note: a) Relative human influence on the landscape (redder color indicates greater human influence), b) conservation priorities identified to avoid areas influenced by human activity (darker maroon areas indicate higher conservation priority), c) forecasted future agricultural suitability, d) conservation priorities identified to avoid areas likely to be utilized for agriculture.

- Targeted in-landscape outreach to present findings of the analysis for each of three sites. Work on the Kilimanjaro and Murchison–Semliki Landscapes was concluded, while activities for the Masito–Ugalla Landscape are ongoing through the extension period.

- A final report for the Murchison–Semliki Landscape (WCS), exploring trade-offs between biodiversity and different socio-economic interests in the landscape, and between biodiversity and carbon conservation for a fixed costs, was concluded. Titled '*Trade-offs in conservation area design: A case study from the Murchison Semliki landscape in Uganda*', the report presents an objective and transparent framework for exploring the distribution of opportunity costs of conservation between stakeholders, and examining two types of trade-offs conservation planners have to address.

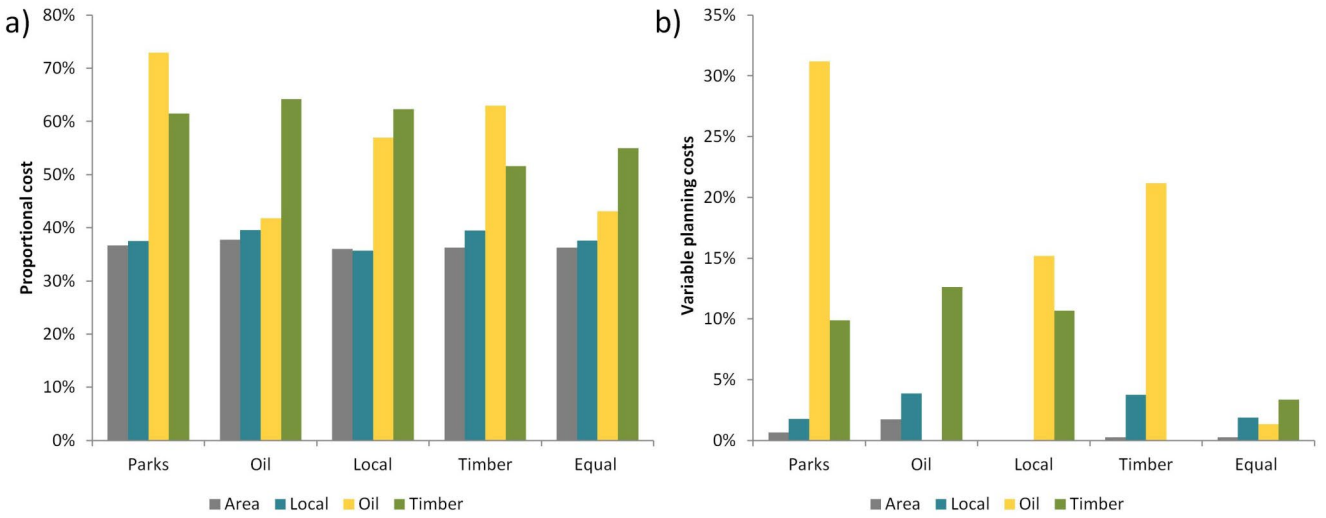

Figure 12. Distribution of the opportunity cost of conservation between three stakeholders in the Murchison Semliki landscape in Uganda.
Note: The distribution of opportunity costs of achieving a single set of conservation objectives varies with respect to strategy chosen to identify areas to achieve those objectives. Relative cost to each stakeholder is reported as a proportion of the total value of the activity in the landscape that is included in the set of conservation areas and thus likely to be impacted by conservation efforts. a) Distribution of opportunity cost under five conservation resource allocation strategies. b) Distribution of opportunity costs of achieving conservation objectives that arise from choices made by planners in where the objectives should be achieved. We refer to these as the "variable planning costs" and differentiate them from costs that are unavoidable given the desired value of conservation in the landscape.

Ongoing Efforts

Pending activities to be completed during the award extension period are:

- Draft scientific paper submitted to a peer-reviewed journal on Murchison–Semliki Landscape findings exploring the distribution among stakeholders of opportunity costs of conservation.
- Develop data and refine analysis for the Masito–Ugalla Landscape in response to feedback from first workshop, including a new deforestation analysis for 2002–2013, community mapping of wildlife and illegal activities, updated mining licenses, modification of district boundaries and development of a chimpanzee habitat health index. A second workshop will be held in Kigoma, Tanzania, in February 2015.

F.4 CLEAN ENERGY AND ECO-CHARCOAL

Goal:

To build knowledge, capacity and accessibility of clean energy technology to enhance adoption of appropriate technologies and practices at a scale that provides meaningful natural resource and biodiversity conservation co-benefits.

Background

Renewable clean energy is a priority for sustainable development. Energy consumption will rise by an expected 40 percent over the next two decades. Most of this increase will occur in developing countries, where nearly two billion people lack access to electricity, and three billion people rely on traditional biomass fuels for cooking, heating, and other basic household needs. The use of these traditional energy sources results in forest degradation and exacerbates climate change by reducing carbon sequestration and increasing greenhouse gas emissions. Additionally, traditional energy sources create indoor air pollution, presenting a public health challenge. These negative impacts highlight the need to invest in sustainable and accessible green energy technologies.

In FY2014, AWF and JGI continued to build on field assessments conducted in FY2012 and FY2013 which helped generate knowledge of alternative clean energy technologies and reinforce ongoing REDD+ programs in East Africa. During this period, key partnerships were forged with institutions focusing on clean energy technologies to raise awareness, build capacity and strengthen ongoing efforts (both at community and institutional level), and identify opportunities for scaling up.

African Wildlife Foundation in Southern Kenya

Planned Activities and Progress to-date:

Raising awareness among local communities

To raise awareness and introduce the project to Mbirikani, AWF held a one-day community leaders' meeting, attended by 42 participants from the Mbirikani Group Ranch.

Two community meetings, targeting mainly women from three villages in the Mbirikani Group Ranch (Olbili, Lemasusu and Oltiasika) and the Siana Women Group who were to be the key beneficiary of the project, were held. Six women leaders attended the former meeting as a follow-up to a training the same women had attended in Monduli, Tanzania, to assess their readiness to undertake the project. Eighteen women and one man attended the second meeting, focused on apprising the participants of the commitment required for the project so that they would prepare adequately and block the proposed dates in order to attend the full training. Find the full reporting under the '*Enabling Maasai women to access improved cook stoves in Mbirikani Group Ranch, Kenya*' report.

Building capacity among selected communities to fabricate and install improved cookstoves developed and tested by the Maasai Stove and Solar Project (MSSP)

Five fabricators from Kimana town in Kenya, all male, were identified for training in making cookstoves at the Maasai Stoves and Solar Project in Monduli. Ultimately, only three attended and successfully completed the full 14-day comprehensive training in technical design, the manufacturing process, stove construction, stove use and maintenance, and village organization.

Twenty local community members were trained (two men and 18 women) in how to fabricate and install improved cookstoves by the Maasai Stove and Solar Project. This was followed by the successful installation of 36 stoves—31 in three villages in Mbirikani Group Ranch, two in Kimana, one in Kuku, and two in Mbirikani town.

A comprehensive report describing the status of the project implementation is available, titled *Enabling Maasai Women to Access Improved Cook Stoves in Mbirikani Group Ranch, Kenya*.

A strategy document on MSSP introduction into Mbirikani Group Ranch

Based on recommendations by GVEP International in FY2013, AWF pursued the strategy of using MSSP from Tanzania to build capacity and pilot use of clean energy cookstoves in Mbirikani using experiences learned from Tanzania.

Creating partnerships among organizations and institutions

AWF networked with more partners that included the Global Alliance for Clean Cookstoves, Maasai Preservation Trust, and Woodlands Trust 2000 to exchange lessons and engage about the work on energy technologies in this area to strengthen capacity for scaling up. To date, partnerships have been developed and deepened with the Maasai Stove and Solar Project provided training on cookstoves and facilitated their installation in homes. Additional discussions with other organizations are ongoing.

Reaching out to national level decision makers to inform policy formulation on clean energy

Outreach to national level is still outstanding and will be pursued during the extension period.

Documentation of piloting experience will be done during the remaining FY2014 no cost extension period. This will capture lessons and experience of the beneficiaries of the installed clean cookstoves. This documentation will also be used in reaching out to a number of individuals, including decision makers.

Specific highlights include:

- Outreach materials include a video clip captured during the training and installation of the stoves. The first draft of the video is included on the link https://www.youtube.com/watch?v=AbwFYsaTSWI.
- AWF has so far installed 36 stoves and is in the process of installing the remaining stoves. The report from the women's group is that there is increasing demand for the cookstoves by many local Maasai women, and men are generally willing to pay for them. The demand, both within and outside the three villages, is logistically challenging primarily due to travel distance for the

trained women. We managed to do 5 stoves away from the three villages which have caused interest among the people.

There is need to scale up the project to a wider ecosystem to reduce the consumption of fuel wood and hence destruction of wildlife habitat.

The Jane Goodall Institute in western Tanzania

Objectives

In FY2014, using ABCG funds, JGI planned to target ten villages under this task, as well as identify five institutions in Kigoma, Uvinza, Nsimbo and Mpanda districts that are high users of charcoal and firewood, to facilitate introduction of energy-saving cooking alternatives. Objectives of this work included:

- Increase awareness within Kazuramimba, Kalinzi, Illagala and other target villages on the multiple benefits of improved cook stoves and other clean energy technologies
- Increase availability and utilization of briquettes as an alternative source of household fuel
- Improve coordination and partnership with other organizations that promote clean energy for household use and food processing such as TaTEDO (Tanzania Traditional Energy Development and Environment Organization), ARTI Energy, and Global Village Energy Partnership (GVEP)
- Ensure that the highest consumers of charcoal and firewood are identified, and alternatives identified for their adoption

Activities under the Clean Energy Task

JGI's implementation of FY2014 Task F.4 activities was affected by delays from the late obligation of ABCG funding and the coincident reduced funding levels of JGI's core program in western Tanzania, of which this activity is part. JGI is now implementing at optimum funding levels and will implement it with the Tanzania-based ARTI Energy.

Planned Activities and Progress to-date:

Raise awareness within Kazuramimba, Kalinzi, Illagala and other target villages on the multiple benefits of using improved cook stoves and other clean energy technologies.

Ten villages were identified for the implementation of cookstoves and other clean energy activities. They include Kalinzi, Bitale, Mkongoro, Nyarubanda, Mukigo and Matiazo in Kigoma District, while Kazuramimba, Ilagala, Uvinza and Mwamila villages, were selected for Uvinza District.

Promote briquettes production and use as an alternative source of fuel and identify on-farm residues that can be used by farmers for making briquettes.

Promotion of briquettes and their production has not yet taken place. This will take place once the contract is signed with ARTI Energy, which will implement these activities. Briquettes will be piloted in Kigoma–Ujiji, because a majority of the urban dwellers rely on charcoal for cooking. Additionally, there

is a high supply of agriculture residue such as rice husks, wood saw dust which can be used as raw materials for production of briquettes.

Build on discussions initiated in FY13 with TaTEDO on the promotion of improved charcoal stoves in households in Kigoma town as well as owners of small businesses.

Discussions were held between JGI and ARTI Energy on the introduction of improved cookstoves. As soon as the contract is signed ARTI will initiate activities in the field to introduce appropriate improved charcoal stoves.

Identify groups interested in solar drying and heating technologies in Kigoma—e.g., small business owners.

This activity will not take place due to the lack of funding in follow-on activities once we identify groups that are interested. We would not like to raise hopes of individuals and/or groups, without having a plan in place to implement the appropriate technologies. However, we will reach out to institutions that participated in the Kigoma meeting in 2013 that focus on solar and may be interested in piloting these technologies in Kigoma, with other funding.

Identify institutions within Kigoma that are the highest consumers of charcoal/firewood and identify alternatives for them.

We identified four Secondary Schools that are high consumers of charcoal and firewood from the Masito Forest to pilot cooking alternatives. Based on initial discussions with ARTI Energy, we will pilot the use of institutional energy saving stoves in the schools. They have already successfully implemented similar stoves in other parts of the country that substantially reduced consumption of fuel wood. The selected schools are:

c) Tumaini Secondary School, Nsimbo District

d) Mpanda Girls Secondary School, Mpanda District

e) Lugufu Secondary School in Uvinza District

f) Nyarubanda Secondary School, Kigoma District

Improve coordination and create partnerships among organizations and institutions e.g., ARTI Energy, TaTEDO and Global Village Energy Partnership (GVEP) that work on energy technologies in this area to strengthen capacity for scaling up. These partnerships can lead to the establishment of model villages and institutions for clean energy demonstrations.

We are improving coordination and partnering with some of the organizations that work on energy technologies. For example, we will be signing a contract with ARTI Energy to introduce improved household stoves, briquettes and institutional stoves. They will also be involved in raising awareness on the benefits of improved stoves in villages and institutions. We are hopeful that with JGI facilitating ARTI Energy to initiate projects in a few villages and schools, this will provide an opportunity for scaling up into a larger area, given the expressed need for these kinds of technologies in this area.

Deliverables:

List of villages targeted and the clean energy intervention implemented in that village. Villages may include

Ten villages were identified for the implementation of cook stoves and other clean energy activities. They include Kalinzi, Bitale, Mkongoro, Nyarubanda, Mukigo and Matiazo in Kigoma District, while Kazuramimba, Ilagala, Uvinza and Mwamila villages, were selected for Uvinza District.

Contracts for TaTEDO and ARTI Energy finalized that include the following deliverables:

- Awareness meetings held within Kazuramimba, Kalinzi, Illagala and other target villages.
- Implementation plans for integrating improved technologies into households and institutions developed.
- Guides to be developed on the processes they have used to pilot these technologies, as well as final recommendations on identification of appropriate clean energy technologies and piloting them.
- Document evidence of savings that a household and institution will make by using fuel efficient stoves.

All the above deliverables are pending completion, in particular, once implementation of activities are initiated by ARTI Energy, these will all be achieved.

F.5 GRAZING MANAGEMENT AND CARBON SEQUESTRATION

Goal:

To understand how better planned grazing can be rolled out across multiple community conservancies, and to determine the extent of rangeland improvement and soil carbon sequestration.

Background

The world's human population is headed to unprecedented levels, with estimates of 9.7 billion people by 2050 frequently cited and supported by demographers (Population Reference Bureau 2014). The provision of services and natural resources (e.g., food, water, energy, raw materials) to sustain this global population has elevated both public and private interests in investing in Africa due to its rich, relatively untapped natural resource base. In addition, Sub-Saharan Africa is the only region where fertility has not declined substantially enough for population stabilization to occur in the near term (Allendorf and Allendorf 2012). Therefore, conservation in Africa will continue to face the vexing challenge of simultaneously increasing development and population growth pressures.

Development agencies, such as the World Bank, are now frequently focused on achieving a "Triple Win" in land use projects to simultaneously generate higher yields, greater climate resilience, and increased greenhouse gas capture (http://www.worldbank.org/en/news/video/2011/09/01/climate-smart-agriculture-a-triple-win). Grasslands, savannas, and other rangelands hold enormous potential to produce "triple wins," as they store an estimated 1.7–2.4 Gt of carbon in soil (Conant, Paustian, and Elliott. 2001; Lal et al. 2007; White, Murray, and Rohweder 2000), occupy 41% of the earth's land area, and sustain some of the world's poorest people through pastoralism and livestock production (Neely, Bunning, and Wilkes 2009). Because pastoralists in many areas have become more sedentary in recent decades, livestock overgrazing or excessive fires combined with drought have led to degradation of soils and productive capacity.

More intensive grazing and failing pastoralist systems in Africa's rangelands are exacerbating rangeland degradation, especially in areas particularly vulnerable to climate change (Reid et al. 2004). In northern Kenya, rangeland degradation is the leading threat to pastoral people and wildlife living in and depending on these semi-arid grasslands for their survival. Recovery of degraded rangelands may provide an additional "win" by securing the culture of pastoralism that in turn provides critical habitat for Africa's iconic wildlife that rely on habitats outside existing protected areas. Consequently, significant recovery of these degraded lands may improve livelihoods, sequester significant amounts of carbon, and conserve biodiversity if new management practices that increase mobility and flexibility in land use are willingly adopted by pastoralists.

Progress Summary and Achievements

Subtask 1.0: Complete Soil Carbon Baselines

Soil carbon and rangeland health baselines for all participating Northern Rangelands Trust (NRT) Conservancies have been completed.

A final phase of field sampling was conducted at an additional 42 representative sites from Melako, Leparua, Nasuulu, and Nakpurat Goto, and four new conservancies in the Northern Kenya Carbon Project (NKCP). This report includes previous field data (collected in 2012 from prior USAID–ABCG support) from 171 sample sites across the original ten conservancies participating in the NKCP plus Samburu National Reserve to a) validate the predictive soil carbon dynamic model (SNAP) for the NKCP project area in Samburu and Isiolo Districts in northern Kenya, and b) evaluate whether grazing management can lead to sequestration of soil carbon in accordance with the SNAP model's predictions.

Within the NRT Conservancies, the model predicted mean and individual site soil organic carbon (SOC) values with 85% accuracy, which is within the required accuracy for the Verified Carbon Standard. The SNAP model results suggest that prolonged, heavy, continuous grazing in the NRT Conservancies over the past 30 years has greatly depleted SOC stocks, but that reduction in grazing intensity will lead to recovery of SOC at a potential rate of 0.3–0.5 tons C/ha/yr across a variety of soil types. This is evident in the approximately 4–6 tons/ha higher SOC for Buffer (grazed in the dry season with restrictions on herd sizes) and Core (ungrazed for the past 8–15 years) Areas, which experienced lower grazing intensities for the past 11–15 years, and the nearly 6–10 tons/ha higher SOC found in Samburu National Reserve, which has been established for 25 years. **The data suggest that, because of past degradation, there is a large capacity for recovering SOC stocks in the Conservancies, as predicted by the SNAP model, and that ongoing and planned grazing management in the participating Conservancies can restore SOC and productivity in these semi-arid grasslands**. The results also sustain previous conclusions that the NKCP can be an economically viable carbon project.

Remote Sensing Tool & Livestock Movement Maps:

NRT has completed development of a remote sensing tool to track monthly livestock movements in 11 conservancies. The tool has been piloted in all the 11 conservancies with a map showing livestock movement from January to June 2015 and the impact in relation to carbon distribution. The tool will help serve as an early warning system in mitigating pasture and water related conflicts. It will also ensure effective planned grazing management by respective conservancies. Advance meetings with grazing committees of conservancies involved are usually held to avert conflict and to provide advice on grazing management. A validated remote sensing model to detect change in levels of grazing intensity across the entire NRT project area is presented in the report titled '*Validation of a remote sensing method of estimating grazing impacts in northern Kenya rangelands*'.

Review Workshop on Planned Grazing:

Grazing coordinators and grazing committees of 11 conservancies have been trained on livestock tracking tools, biodiversity assessment and mapping exercises necessary for making informed decisions on planned grazing management. Within these workshops, feedback sessions were incorporated that involved sharing information on livestock numbers in these conservancies and their movements and potential impacts on carbon and conflicts arising from competition for pasture and water amongst various communities and how to avert such conflicts beforehand.

Soil Carbon Analysis:

NRT completed analysis of soil and vegetation monitoring data for purposes of modelling predictive soil carbon. This will allow making informed decisions on how landscapes are managed to reduce

global atmospheric levels of greenhouse gases. A progress report has been completed, titled '*Soil Carbon Dynamics in Northern Kenya Rangelands*'.

Census on Livestock:

Assessment of livestock numbers and household numbers directly benefiting from livestock for purposes of impact on rangelands is currently on-going for 11 conservancies.

Subtask 2.0: Rangeland Health Baselines

Biodiversity reference:

A biodiversity baseline exercise for purposes of creating a reference collection database on impact on carbon has been completed. The information will serve as a basis of identifying potential carbon project partners in terms of carbon financing and carbon management, especially in arid and semi-arid areas of northern Kenya on commercial terms for the economic benefit of these pastoralist communities. The rangeland health or biodiversity baseline assessment is presented in the report titled '*Impacts of grazing management on biodiversity in northern Kenya rangelands*'.

Figure 13. These photo indicate the rugged terrain of the gulley healing program that was only done for one week.

Species richness for herbaceous plants, trees, birds, and two indicator insect groups grasshoppers (*Orthoptera*) and dung beetles (*Coleoptera*: *Scarabeidae*) was not significantly different among the three different grazing histories Core, Buffer, and Settlement (unrestricted grazing), but Shannon-Wiener diversity indices were significantly higher for all groups in either Core or Buffer areas as compared to Settlement areas. Species richness or diversity index was higher in Buffer or Core areas than in Settlement areas in 16 of 20 cases, suggesting that reducing grazing intensity may lead to higher biodiversity through both more species and a more even distribution of individuals among species.

These results suggest that proposed planned grazing management in semi-arid areas of the NKCP will improve biodiversity and provide a significant ancillary benefit of the project beyond sequestering greenhouse gases in the soil. The study provides both a baseline (Settlement Areas) of biodiversity against which future monitoring of biodiversity can be compared and evidence that improved grazing management in the past has increased biodiversity, particularly of trees and herbaceous plants. The study also demonstrates that diversity in areas where grazing is reduced but

not eliminated is similar to or higher than in areas where livestock grazing has been virtually eliminated for the past 10–20 years. Consequently there is evidence for claiming that the NKCP will increase biodiversity through the implementation of planned rotational schemes that allow rest of forage species during the wet season.

A rangeland restoration effort on *bomas* and bush clearing has been undertaken in two conservancies, Meibei and Westgate. However, reseeding of grass has been forestalled until onset of rainy seasons. Immediate impact has seen the number of wildlife, especially Grevy's zebra increasing around cleared areas due to access to grass sprouting underneath trees. Upon onset of rains, the cleared areas will be re-seeded with grass which will sprout to provide commercial grass that will be sold to benefit the conservancies as additional revenue streams alongside tourism and other community enterprises.

Figure 14. A woman clearing the *Acacia reficiens* species.

Subtask 3.0: Remote sensing tools to track management actions and impacts

A new method of monitoring livestock based on time differences in satellite-based measurements of "greenness" (NDVI—Normalized Difference Vegetation Index) was validated with unprecedented intensive measurements of forage biomass on rangelands in Kalama and Westgate Conservancies. Biomass was strongly correlated with measurements of NDVI both before and after cattle passed through each block. More importantly, the amount of forage removed by cattle (difference in biomass between "Before" and "After" grazing) was significantly correlated with a three-week difference in NDVI. This suggests that small differences in NDVI over short time periods can closely approximate grazing impacts and that uncertainty in NDVI-based measures of grazing found in previous studies are more likely limited by under-sampling in ground-based measurements rather than errors in satellite measurements. **Maps of changes in NDVI may therefore be used to identify areas of different past grazing use, provide feedback on compliance of herders with rotational grazing plans, monitor large-scale livestock movements, and anticipate future conflicts among different pastoralist groups in common rangelands**. This method also appears to be suitable for monitoring vegetation as required by carbon market standards, such as the Verified Carbon Standard, and may greatly reduce the cost and increase the efficacy of implementing projects with improved livestock management.

A validated remote sensing model to detect change in the levels of grazing intensity across the entire NRT project area was conducted and presented in the report '*Validation of a remote sensing method of estimating grazing impacts in northern Kenya rangelands*'.

Field accounts that exemplify successes or challenges

With the aim to increase productive rangelands in northern Kenya, approaches of cattle bunching, gully healing and reseeding have been a success for the targeted conservancies. This has built trust among the communities such that individual cattle owners can contribute their livestock to the programme to be under someone's care what could not be expected from a pastoralist if not a kinsman. In addition the participation at the household level in planned grazing shows progress with approximately 70% of the target households participating for 2013. The remote sensing tool of tracking livestock movement in 11 conservancies has been so effective that it has provided vital information on concentration of livestock and their predictive movement within or between conservancies. This improves the ability to anticipate livestock movement and therefore make requisite arrangements to hold grazing and peace meetings to avoid conflict over pasture and water especially during the dry season. A case in point is a location in northern Kenya, which border 3 community conservancies where conflicts have been avoided as a result of using the information on the livestock movement data prepared, analyzed and reported by various grazing coordinators. This has allowed effective planning of resources in averting conflicts related to grazing between various communities under the NRT community conservancies.

Figure 15. Reseeding the grounds with *Cychrius cillaris* seeds then later cover with *A. reficiens* branches

Ongoing Efforts

Subtask 1.0: Complete Soil Carbon Baselines

Preliminary Habitat Map:

Building on previous efforts funded by ABCG and others to enhance tracking of NRT rangeland management activities, a consultant has been identified and contracted to undertake preliminary habitat imagery to improve modelling of soil carbon sequestration and tracking rangeland health in 11 NRT member conservancies using LANDSAT imagery. This data collection activity has been re-scheduled to early January 2015 and is expected to take 40 days.

Subtask 2.0: Rangeland Health Baselines

Carbon Project Partnership:

Opportunities for carbon project partnership between NRT conservancies and the private, research and development, public institutions are yet to be accomplished, probably with much expectation that TNC will provide the lead in actualizing the carbon project.

Next steps and project plan adjustments

The concept of grazing management and its impact on carbon is a fairly new one in community conservancies in northern Kenya, whose main livelihoods are derived from livestock, due to illiteracy and to some extent lack of awareness. To curb this, the project will target opinion leaders and county government to spearhead the awareness campaign for acceptance within their community conservancies.

NRT operates in the vast arid and semi-arid parts of Kenya and access to some remote parts have been a challenge to some of our consultants conducting the carbon and rangeland health baselines. The technical preliminary habitat map has therefore been re-scheduled to early January 2015 to allow ample time for preparation.

Room for improvement

Through building the capacity for the conservancies to developing mechanisms to sustainably run the projects and become self-reliant:

Building capacity of communities in understanding the importance of planned grazing and its impact on soil carbon distribution, rangeland restoration and peaceful co-existence is key to advancing the benefits of the project to the wider community. In addition, seeking potential partnership in the carbon project, especially carbon financing and management will be of great economic benefit to a number of poor household community members due to the revenues envisaged from carbon projects flowing back to the community in terms of development projects e.g. education, water , health, livelihoods and healthy environment.

8

Task G: Bridging the Gap between Global Health and Biodiversity

G.1 HIV/AIDS AND CONSERVATION

Background

The first several years of ABCG's BATS-funded work on this issue were classified as one of our "Emerging Issues." Given the increasing importance of equipping conservation practitioners and local communities with support, education and programs to address HIV/AIDS, as well as other threats to global public health, ABCG has graduated this theme into a sub-Task under the theme Global Health and Biodiversity Conservation.

ABCG members, conservation partners and local communities have been trained in developing workplace policies and programs on HIV/AIDS and conservation to assure that they have sufficient resources to respond to local and regional threats posed by HIV/AIDS.

In this light, ABCG produced the HIV/AIDS and Environment Manual in FY2013, and more recently, engaged Daulos D.C. Mauambeta, Managing Partner of EnviroConsult Services (formerly Executive Director of the Wildlife and Environment Society of Malawi) to develop a training guide and lead a training workshop (see FY2013 inception report: '*Consultancy on developing a training manual and conducting training on HIV/AIDS and Conservation, South Sudan*').

Activities and Output

Upon identifying and hiring Mr. Mauambeta, JGI worked with him to develop training materials based on the *HIV/AIDS and Environment Manual* and to coordinate a training workshop in conjunction with ABCG members and partners. The training material consisted of a training guide, titled '*HIV/AIDS and Environment: A Training Guide for Conservation Organizations*'. The guide was produced in June 2013, and used in the workshop held in Kigoma, Tanzania in November 2013.

Figure 16. The Kigoma HIV/AIDS and Environment Training Workshop participants. Photo courtesy of D. Mauambeta

The training on HIV/AIDS and the Environment was organized by JGI in Kigoma, Tanzania. Part of the output of the training was the development of an HIV & AIDS Policy for JGI. An HIV & AIDS Policy was developed and implementation is expected to occur across all JGI regional offices. The training drew participants from various institutions within Tanzania and surrounding countries. Details are contained in a training report which was produced for the training that was done in Tanzania, titled '*Report on a Training Workshop on HIV & AIDS and Environment*'. An ABCG.org feature article was written up on the event by Natalie Bailey, former ABCG Coordinator, and presents a summary of workshop activities and output, titled '*ABCG equips conservation organizations to support staff, partners, and local communities affected by HIV and AIDS*'.

G.2 WATER, SANITATION AND HYGIENE (WASH) AND CONSERVATION

Goal:

To improve the ability of organizations working in sub-Saharan Africa on Water, Sanitation and Hygiene (WASH) and freshwater ecosystem conservation to plan, monitor, implement and evaluate the outcomes of integrated projects intended to achieve simultaneous health and environment goals.

Background

Functioning watersheds are critically important to the integrity of freshwater resources, which in turn are crucial to the health and hygiene of human communities in a wide array of landscapes. Of particular concern are areas of impoverished or marginalized communities highly dependent on natural resources, which overlap with areas of high biodiversity value including endemism.

Conversely, in downstream reaches of rivers, acute water shortages are becoming the norm in some areas as the myriad stakeholders take up water to meet their disparate needs including heavy industry, irrigation for agriculture, fisheries, tourism, and municipal water and electricity utilities. The impacts on human health linked to the lack of access to improved water and sanitation facilities range from water-borne diarrheal diseases such as typhoid, giardia and cholera to water-washed diseases such as roundworm, trachoma and scabies.

The importance between water, human development (or lack thereof) and the environment cannot be understated. Without intact water towers and functioning ecosystems, human communities stand to lose along with biodiversity. The resilience of WASH systems to catastrophes is thus deeply linked to the integrity of ecosystem services and biodiversity.

Water, sanitation and hygiene projects are a fundamental cornerstone of human development. Access to water (in relative proximity) translates into increased economic productivity and healthier communities. Well-planned sanitation infrastructure minimizes the risk of acquiring water-borne diseases resulting in a healthier and more vibrant community, as well as healthier ecosystems.

Unfortunately, institutional barriers have sustained an untenable dichotomy between freshwater conservation and WASH systems. While there are many examples of organizations and projects integrating biodiversity conservation and WASH, the FY2012 ABCG report '*Linking Biodiversity Conservation and Water, Sanitation, and Hygiene: Experiences from sub-Saharan Africa*' called for more comprehensive guidelines on how to integrate the two disciplines under different scenarios, ecoregions and climates. Building on this report, in FY2013 ABCG members collaborated with a number of development organizations specializing in WASH, to develop guidelines for the design and implementation and monitoring of integrated projects to improve freshwater conservation and human well-being. This effort resulted in the '*ABCG Freshwater Conservation and WASH Integration Guidelines*'.

In developing the integration guidelines, and in true collaborative spirit, ABCG members and cross-sector colleagues uncovered a gap in a practical monitoring and evaluation (M&E) framework. Members thus focused activities for the FY2014 output on addressing the emergent issue.

Activities

Conservation International (CI), African Wildlife Foundation (AWF) and The Nature Conservancy (TNC) set out to convene a brainstorming workshop with counterparts in the WASH and development sectors from countries including Kenya, Malawi, Rwanda, Tanzania and Uganda. The overarching goal was to generate and disseminate integrated M&E indicators for freshwater conservation and WASH programming.

Workshop Summary on Integrated Indicators for Freshwater Conservation and WASH Programming—July 2014

From July 15 to 17, 2014, CI, AWF and TNC co-hosted a workshop in Nairobi, Kenya, for African conservation, health and development practitioners to design an integrated WASH and freshwater conservation M&E framework. The workshop was co-sponsored by USAID Bureau for Africa and ABCG. This event, entitled, *Workshop on Integrated Indicators for Freshwater Conservation and WASH Programming*, was the first time that WASH and freshwater conservation sector professionals came together to craft an integrated M&E framework for improved health, development and conservation goals.

More than 26 health, development and conservation experts from Kenya, Malawi, Rwanda, Tanzania and Uganda contributed technical advice and strategic inputs on the overall framework for how WASH and freshwater conservation projects can be measured in a more holistic, mutually-reinforcing manner. The workshop participants included representatives from AWF, Catholic Relief Services, CI, Jane Goodall Institute, Kenya Water Towers Agency, Kenya Water and Sanitation CSOs Network, Kenya WASH Alliance, Millennium Water Alliance, Neighbours Initiative Alliance, SNV Netherlands Development Organization, Total LandCare, TNC, Water for People, Water Aid East Africa, Water and Sanitation for the Urban Poor, Wetlands International, World Vision International, and the ABCG program officer.

By the end of the three days, workshop participants had reached agreement on a draft M&E framework and indicators for integrated programming (workshop presentations are available in the '*USAID and ABCG—Integrated Indicators for Freshwater Conservation and WASH*' slide deck .

CI, in collaboration with ABCG members, workshop participants and WASH and conservation partner organizations, further refined the framework and subsequently produced '*ABCG Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators*'. A comprehensive table of the indicators, including intermediate results, rationale for the indicators, and accompanying notes can be found in Table 2, '*Draft Freshwater and WASH M&E Indicators*'.

The M&E framework builds on the USAID-funded ABCG programming guidelines, called '*Freshwater Conservation and Water, Sanitation, and Hygiene Integration Guidelines: A Framework for Implementation in sub-Saharan Africa*', released in December 2013.

The full workshop report is completed and available as '*USAID and ABCG—Integrated Indicators for Freshwater Conservation and Wash Workshop Report*'.

The group also developed an outreach plan for disseminating the draft framework with donors, multi-sectoral partners and other conservation, health and development practitioners in sub-Saharan Africa over the remainder of FY2014. For questions on the M&E framework and guidelines, please contact Colleen Sorto at csorto@conservation.org.

9

Task H: Forecasting and Analyzing Conservation Needs and Building Capacity on Critical Issues

Goal:

To analyze future issues that will impact biodiversity conservation in Africa and help develop capabilities of USAID and African partners to address these issues.

H.1 LARGE SCALE LAND ACQUISITION

Background

There is a growing demand for and, as a result, increasing competition over land in many countries in Africa. While land is needed for many purposes, a significant amount of land is being allocated by governments to large private—often foreign—companies for the production of high value chain commercial crops, such as rice and oil palm. The procedures by which these companies acquire land and the social and environmental implications of commercial production are not well documented or understood. For example, large tracks of land are being allocated for commercial agriculture in Tanzania's Southern Agriculture Growth Corridor (SAGCOT). The costs and benefits to rural populations and the implications for core biodiversity areas that serve as critical habitats for wildlife are unclear. With the increasing demand for land, there is also a growing tendency by government and companies to consider wildlife and forest lands as vacant and idle, and therefore available for new commercial agriculture ventures. Such trends are taking place in many African nations, including Tanzania, South Sudan, Ethiopia, Uganda, and Mozambique. Large-scale land acquisitions for commercial agriculture is potentially a significant threat to Africa's protected areas, wildlife movement corridors and dispersal areas as well as to other habitats that provide important ecosystem services (e.g., water towers).

In FY2014, two ABCG member organizations—African Wildlife Foundation (AWF) and World Resources Institute (WRI)—committed to undertaking a series of activities to better understand and address the threat of large-scale land acquisitions to people and biodiversity. The activities and associated products developed by AWF and WRI are presented below.

World Resources Institute

Activities and Output

In FY2014, WRI conducted policy research on the processes by which land is acquired by agricultural investors in Tanzania and Mozambique. The focus of the research was on the procedures for acquiring community land (collectively held land), not individual private property or public land. WRI examined

the processes for acquiring land held under other tenure arrangements but only for comparative purposes. In addition, WRI examined national laws (and relevant international instruments) for public participation, access to information and recourse that have implications for land acquisition procedures.

WRI also agreed to produce and deliver the following four products:

- A written report that documents the research findings and recommendations
- A set of graphics of the land acquisition procedures and the opportunities or citizen engagements (these graphics can be used in written documents, PowerPoint presentations and posters)
- A slide deck and PowerPoint presentation on the research findings and recommendations
- At least one presentation on the research findings and recommendations (venue TBD)

Ongoing Effort

WRI has completed the research on land acquisition procedures in Tanzania and Mozambique. A draft report has been prepared which captured the principal research findings and recommendations. The report includes a number of tables and charts of the land acquisitions procedures. The draft report is currently under internal review and will be finalized before the end of the FY2014 no-cost extension. WRI is currently developing a slide deck on the research findings and recommendations. WRI is in discussions with ABCG about presenting the research results at an ABCG event as well as presenting the findings at a conference in the Philippines on land acquisition in Asia and Africa.

African Wildlife Foundation

Activities and Output

In FY2014, AWF sought to assess the processes followed by the government of Ethiopia in allocating land and to determine the ecological and social ramifications of large-scale land acquisitions (LSLAs) in the country, paying special attention to areas of conservation interest. More specifically, AWF agreed to:

- Conduct a risk assessment of the impact of current and planned LSLAs in Ethiopia, with deliberate focus on the landscape comprising Simien Mountain National Park and surrounding areas (in the Amhara Region).
- Assess the legal/policy provisions and processes for land acquisition, allocation and leases. Asking questions on: How are companies acquiring land and what is the legal framework versus the actual allocation? What are the relevant policy provisions for land conveyance and agricultural business operations? How do relevant ministries and agencies coordinate (or not) and how do their processes conflict with or complement each other?
- Make specific recommendations for improving LSLA processes and transactions in Ethiopia such that they are more beneficial for biodiversity and communities. This entails an assessment of gaps and opportunities regarding social and environmental safeguards relevant to LSLAs.

Identifying gaps in inter-agency/ministry consultation on instances of LSLAs where interests conflict (e.g., between The Ministry of Agriculture and the Ethiopian Wildlife Conservation Authority), and identifying ways in which to improve this consultation for informed decision making and planning.

Ongoing Effort

1. A field assessment and survey on LSLA processes in Ethiopia, with recommendations on how best to safeguard biodiversity conservation. In addition to the new assessment, the team will also conduct a comparative analysis between the Ethiopian experience and the Tanzania analysis. This will be used to develop a suite of recommendations that could serve as best practices for future large scale land acquisition ventures in these and other countries.
    - Implementation of this output was delayed due to security concerns in Ethiopia's Gambela region. As such, work is ongoing, with assessments based on inputs from Addis Ababa stakeholders that an AWF consultant has interviewed.
2. A white paper to be presented at an appropriate international land conference as a power point.
    - The paper was partially written as part of the 2014 World Bank Conference on Land & Poverty, based on the Tanzania assessment, but still awaits completion of Case Study 2—Ethiopia.
3. A simplified summary of FAO Voluntary Guidelines provisions that is user friendly and easy for government and local communities to follow and understand.
    - This output will commence once AWF has done the assessment report on Ethiopia.

AWF's lead on this task will also co-author with other ABCG task group members various outreach materials that will be disseminated as fact sheets, white papers, technical reports, and through joint participation at conferences and meetings.

To date, AWF has developed the Scope of Work, hired a consultant, Sue Mbaya—www.sm-associates.org, and commissioned the work to start. The activities are still ongoing and will be completed by 31 December 2014.

H.2 SMART LAW ENFORCEMENT

Background

Conservation of biodiversity in public, private and community lands requires: a) the formulation of rules and regulations that regulate access to, and use of, natural resources; and b) enforcement of these rules and regulations. In many countries enforcement of laws designed to conserve biodiversity is weak. As a result, biodiversity is being lost at an unrelenting pace. Failure to enforce laws in many public, private and community protected areas is a result of several contributing factors, among which are: 1) insufficient staff dedicated to law enforcement; 2) law enforcement staff lack the skills, experience, information and motivation needed to plan and implement law enforcement efforts; 3) law enforcement agencies lack the funds to cover the costs of implementing law enforcement plans; and 4) corruption and lack of transparency through many levels of enforcement. A frequent barrier to effective law enforcement is not the lack of staff or funds, but rather the lack of skills, knowledge and motivation to plan and implement successful law enforcement efforts. This is true for national protected area staff as well as community rangers.

To help overcome this barrier, the ABCG partners WCS, AWF, JGI and WWF are building on their collective experience and scaling up training protected area staff to implement effective law enforcement, by demonstrating a new and improved user-friendly software tool to plan, implement, monitor, and adaptively manage ranger-based law enforcement patrols.

SMART Overview

SMART focuses on ranger patrols and utilizes data on poaching encounters and other threats to biodiversity collected by rangers as part of their day-to-day work. The tool provides three critical functions: First, it empowers protected area managers with timely and accurate information on where, how and by whom, threats are occurring. Second, it enables clear tracking of the progress of law enforcement efforts in addressing these threats. Third, it improves transparency and potentially reduces the risk of corruption and abuses. Most importantly, the tool is relevant at the local level: driven by the management needs of the site and usable by front-line enforcement staff. This ensures that information goes to where it is needed most urgently and by those people who can use it to greatest immediate effect.

The first public version of SMART Version 1.0 was launched in February 2013. Following this release—and under the first year of ABCG support—we conducted two introductory technical workshops for SMART users in Central Africa and East Africa in March and May, 2013, respectively. These workshops succeeded in leveraging considerable government interest and engaging new partners to the SMART approach. During 2013, the SMART Partnership formally tested SMART 1.0 in a number of demonstration sites across Africa (and Asia and Latin America). This has provided formal feedback and bug reporting which has greatly improved functionality and usability of SMART. SMART 2.0 was released in December 2013. This fixed a number of identified issues in the earlier version and added new functionality: namely a mobile data gathering plug-in (SMART-CyberTracker) that will allow field collection and automated upload of SMART data from Android/Windows Mobile-enabled hand-held devices using the CyberTracker interface.

In FY2014, we build on momentum generated during FY2013 by conducting an initial refresher and quality control training for SMART trainers in the new functionality of SMART 2.0 and then focused on providing site-level support for SMART implementation in a suite of demonstration sites where ABCG partners currently support, or plan to support, SMART implementation. Finally, we hosted a lessons-learned workshop for SMART partners towards the end of the second year of implementation in order to develop best practices for SMART implementation and adaptive management in protected areas.

Project objectives

With the support of the ABCG, our aim was to:

1. demonstrate implementation of SMART across at least 5 sites within Central and East Africa;
2. build a cadre of well-trained SMART users within Central and East Africa motivated to sustain use and encourage further adoption of SMART; and
3. build a constituency for rigorous and transparent accounting of conservation effectiveness.

Five sites (in Gabon, Tanzania, Kenya, Congo and Democratic Republic of Congo) were selected where ABCG partners have a) active project(s), b) are working with national law enforcement authorities, or other formal management groups; c) have the resources to support patrolling and law enforcement using SMART, and d) have full-time technical staff present at the site to provide guidance and oversight. All of these demonstration sites have previously attended the SMART technical training workshops hosted in the first year of this project.

The following is progress accomplished in the second year of the ABCG-SMART program.

Build regional capacity and coordination in SMART implementation

A regional SMART technical training was conducted at the Southern African Wildlife College (SAWC), Hoedspruit, South Africa between the 16th and 20th June 2014. The training targeted two different groups; the SMART implementers (administrators and trainers) who are interested in adopting SMART within the sites they work; and the Wildlife College Directors with interest in including a module on Law Enforcement Monitoring using SMART within their training curriculum.

A total of 28 participants representing 19 organizations joined the workshop from 17 African countries. The course covered: the philosophy of adaptive patrol management and the role SMART plays in facilitating this; how to use the SMART software (version 3.0.1) and adapt it to the needs of the site, with introduction to the new plug-ins (entity tracker and independent observation); and the process of implementing SMART at a site (trainings, meetings, and technical support). Additionally the wildlife college directors evaluated the training curricula for SMART implementation, and how to adapt the training for wildlife-college needs. A SMART Training Manual and supporting files covering all modules of SMART version 3 was produced and can be downloaded here, titled '*Technical Training Manual for SMART 3.0*'. Overall, both the training and the SMART software were well received with 100% of respondents agreeing that the SMART approach to law enforcement monitoring (LEM) is relevant and useful to their conservation site and 100% agreeing that they can apply the knowledge and skills learnt to their work.

The course was taught by Tony Lynam (WCS), Ruth Starkey (WCS) and Olivia Needham (Zoological Society of London), and coordinated by Alexa Montefiore (SMART Partnership). See the full report, titled *'SMART: Implementers and Trainers' Workshop—Final Report'* here.

Build and mentor site-level capacity in implementing SMART

Through direct and leveraged support from ABCG, SMART is now being piloted in 47 implementation sites across 17 countries in Africa (see Figure 17). There has been considerable expansion and uptake in Africa over the last year, proportionally more so than in other regions and continued interest from new partners and countries (particularly Southern and West Africa).

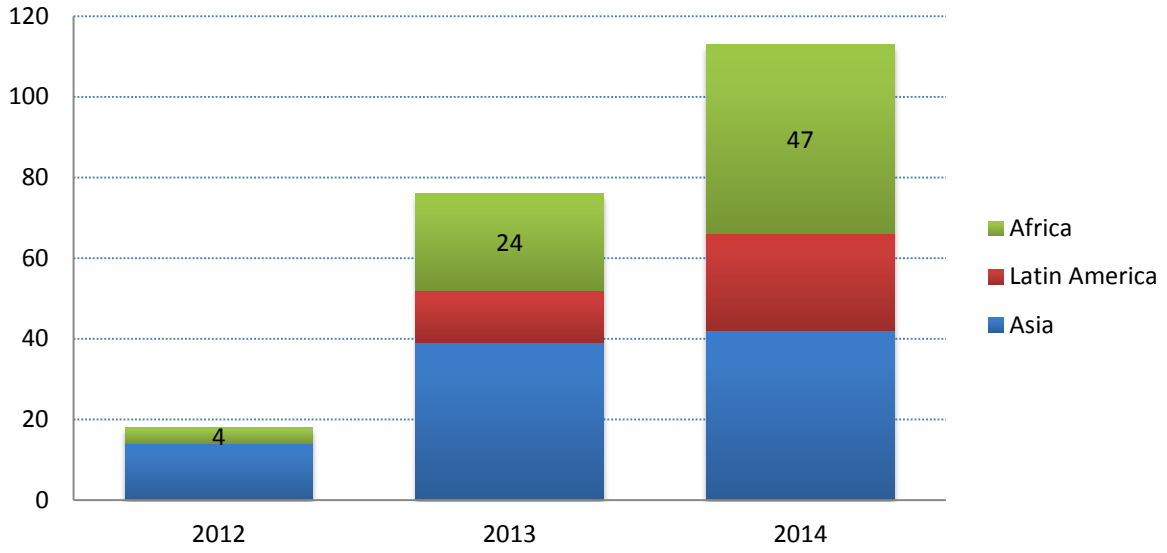

Figure 17. Growth in total number of global SMART implementation sites.

The following updates from the field summarize activities in demonstration sites by ABCG partners.

Demonstration sites directly supported through USAID/ABCG:

Gabon's National Park Network (WCS and WWF)

- Gabon's National Park Agency (ANPN) adopted SMART in 2013 across its entire protected area network of 13 national parks together with the Presidential Reserve of Wonga-Wongué and the Forest Reserve of Mondah (15 sites in total). SMART rollout is led by WCS (Wildlife Conservation Society) in collaboration with WWF (World Wildlife Fund, specifically in Loango, Moukoulaba-Doudou and Mwagne National Parks), working in partnership with both Gabon's National Park Agency (ANPN) and the Ministry of Water and Forest's Department of Wildlife and Protected Areas (DGFAP) that operates in the buffer zones surrounding the national parks. Gabon represents the first country to have adopted SMART at the national level and is serving as a useful model in the sub-region.
- A total of 13 SMART focal points (representing WCS, WWF, ANPN and DGFAP) have been trained in SMART data collection, entry, querying and reporting protocols. These focal points

are based within protected areas across the country and serve as the liaison between the park director and enforcement team and the technical support group based in Libreville.

- Monthly reports are collated from focal points across all protected areas parks from Libreville (currently managed by WCS), synthesized and a single network-wide report is submitted to the Executive Secretary of ANPN. Annual reports that include a number of key performance metrics are used by ANPN central level to calculate performance-based salary increases and bonuses.
- In March 2014, a refresher training was held for all 13 SMART focal points, which also included training in the new CyberTracker–SMART plug-in for mobile data gathering (see Appendix: 'Refresher training of SMART focal points in Gabon') and a new training module for sample collection from elephant carcasses for genetic and forensic analysis. Six CyberTracker units were purchased and are now being field-tested across six protected areas with WCS and WWF technical support.
- A SMART evaluation is currently being conducted across ANPN's national parks to assess utility, uptake and appreciation of the SMART tool by Park Wardens.

Figure 18. Photo courtesy of WCS Gabon.

Nigeria's Yankari Game Reserve (WCS)

- The prior experience of the WCS Nigeria program in using the CyberTracker system played a major role in development of and full field-testing of mobile devices for the SMART–CyberTracker plug-in that was included in the SMART 2.0 release. In the interim, the WCS Nigeria team has continued to use CyberTracker for law enforcement monitoring in the Yankari Game Reserve (Bauchi State), and in the Cross River National Park, Mbe Mountains (a community reserve) and Afi Mountain Wildlife Sanctuary (all in Cross River State) whilst preparing to migrate from CyberTracker to SMART in the second half of 2014/first half of 2015.
- Two high-level users have been trained in SMART operations (through the SMART Partnership regional training workshops) and an on-site training for 8 field staff from WCS Nigeria and WCS Cameroon, in SMART 2.0—in advance of full migration from CyberTracker to SMART—was conducted in June 2014.
- The Nigeria National Park Service (NNPS) is very keen to implement SMART–CyberTracker across their entire protected area network. The level of capacity within the NNPS is low, and this will require a phased approach with considerable capacity building and long-term technical support. WCS is in discussions with NNPS to explore options for supporting such a program but in general this is encouraging.
- More than five years of LEM implementation in Nigeria by WCS has already shown its value and thus holds great promise for an expansion under SMART; in the Afi Mountains Wildlife Sanctuary, LEM data helped lobby the Cross River State Forestry Commission to deploy more rangers to the site and in Okwangwo Department, the WCS LEM quarterly reports are viewed by the NNPS HQs in Abuja as the most reliable source of information from the site.

AWF African Apes Initiative (AAI) (AWF)

AAI further expanded and improved use of CyberTracker at different sites and advanced integration of CyberTracker (CT) and SMART. A field-exercise to share lessons learned and discuss about next steps was organized in the Lomako Yokokala Faunal Reserve with participation of conservation practitioners from the Dja Faunal Reserve (DFR), the Lomako Yokokala Faunal Reserve (RFLY), Tshuapa, the Lomami, and the Lualaba (TL2), Virunga Park and Niokolo Koba National Park.

In both DFR and RFLY, AAI expanded the use of CT throughout the protected area and are currently working on linking CT and SMART 3.0.2 using the new SMART–CT plug-in planned to be implemented as soon as possible. Baseline data for both PA's is becoming increasingly compelling, and as a result, specific anti-poaching actions have been developed and implemented.

The same approach is now underway in the 1,000km² Iyondji Community Bonobo Reserve (Equateur Province, DRC)

Within the next six months, AAI plans to implement this SMART–CT approach to Campo-Ma'an National Park (Cameroun) and in Bili Uele (northern Democratic Republic of the Congo).

All above is happening through the Protected Area authorities, with simultaneous capacity strengthening of these authorities. AAI receives GIS/technical support by a team based in AWF-DC (D. Williams and F. Kikuyama).

Kilimanjaro/Samburu Landscapes (AWF)

Building on progress in the Kilimanjaro landscape, in June AWF staged a SMART training for AWF staff in Nairobi, Kenya. The training also involved demonstrations of CT applications. Staff attended from AWF programs in Samburu and Mau Forest in addition members of the AWF's Conservation Science department. This represents a major initial step towards expanding SMART–CT use in AWF's East African programs.

AWF is coordinating with the London Zoological Society, Kenya Wildlife Service, and BigLife Foundation to stage a data collector/manager-oriented SMART–CT training in the Amboseli-Tsavo region in December or early 2015. BigLife Foundation is based in the landscape and manages a network of game scouts programs on group ranches in the area.

Tchimpounga Faunal Reserve, Republic of Congo (JGI)

In 2013, a mobile field data collection training workshop for ecoguards was conducted in Tchimpunga Nature Reserve, Congo. The training was focused on using Android tablets and Open Data Kit (ODK) to record patrol data. ODK forms were developed following SMART protocols as much as possible. In 2014, ecoguards used these forms to collect data on patrolling effort, human activities and threats, and chimpanzee and wildlife presence in the reserve (see Figure 19). The data will be used to evaluate and improve the ODK forms. A refresher training for the ecoguards will be conducted in November 2014 to introduce the new ODK data collection protocols and scale up monitoring efforts over a larger area of the reserve.

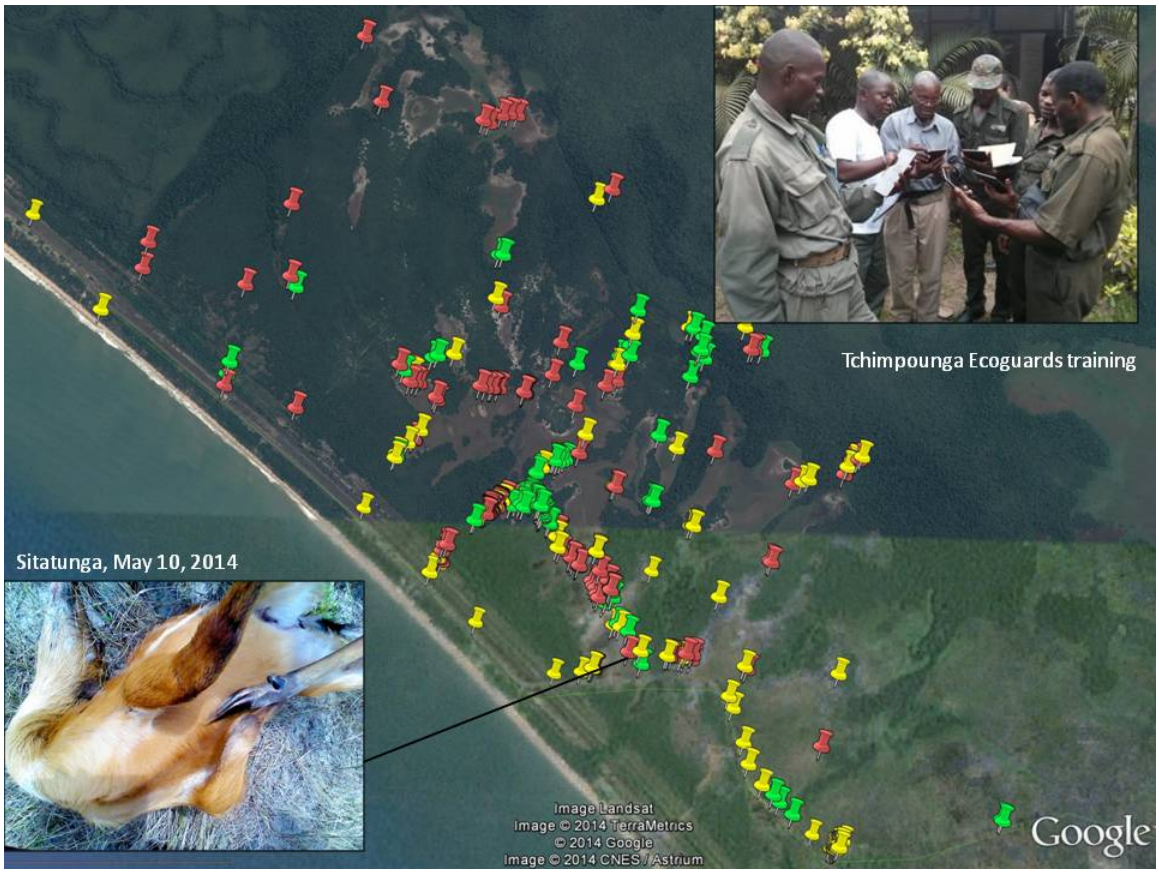

Figure 19. Data on patrolling effort (yellow dots), human activities and threats (red dots), and chimpanzee and wildlife presence in the reserve (green dots).

A new UAV Skywalker™ X-5 Flying Wing unit[1] system was built in 2014 to support monitoring of chimpanzees and illegal human activities in the Tchimpounga Nature Reserve. The UAV system has the potential to reach every corner of the reserve from three launching sites and collect georeferenced images. The plans for 2015 include importing both mobile patrol data collected by the ecogurads and images from UAV into SMART to demonstrate its potential uses for supporting chimpanzee surveys and law enforcement in the reserve.

Demonstration sites leveraged through USAID/ABCG-supported SMART workshops

The following SMART activities have been leverage through ABCG-support, either through national workshops or through training of key staff who have gone on to lead implementation in their host sites/countries.

Democratic Republic of Congo:

SMART has been implemented in a number of sites by ICCN (*Institut Congolais pour la Conservation de la Nature*) in eastern DRC by WCS (including Kahuzi-Biega National Park, Okapi Faunal Reserve, Maiko National Park, Itombwe Natural Reserve, as well as in Salonga National Park) and is scheduled to be

[1] *http://www.skywalker-model.com;*
http://www.hobbyking.com/hobbyking/store/__27131__Skywalker_X_5_FPV_UAV_Flying_Wing_1180mm.html

implemented in the Ngiri Triangle with WWF support. WCS, AWF and WWF participants from across DRC's protected areas have participated in ABCG-supported workshops, with WCS staff members from DRC participating as trainers at the most recent South Africa workshop and staff from WWF-DRC participating as trainees. Discussions are currently underway with ICCN, GIZ, WRI, USAID and other partners (incl. WWF, AWF and CI) to adopt SMART at national level across DRC's protected area network.

Republic of Congo:

WCS hosted a national-level technical workshop on SMART in northern Congo in March 2014 (with participation from WCS, African Parks and WWF sites), and nominated a national WCS coordinator, who was a participant in the first ABCG-supported SMART workshop in Gabon in March 2013. To date SMART has been piloted in the Nouabalé-Ndoki National Park and buffer zone with rollout expected to proceed from November 2014 across Congo's three national parks.

Tanzania:

Tanzania (WCS and AWF) hosted the first East Africa regional SMART workshop under ABCG support. SMART has now been piloted in Ruaha and Katavi National Parks with WCS and TANAPA support, with plans for further site training in collaboration with WCS and CITES MIKE in Tarangire and Manyara National Parks and Selous Game Reserve during 2014/15.

N.B. TANAPA have officially adopted SMART across its protected area network in Tanzania and formally requested WCS to provide technical support in rolling the program out in 2015.

Mozambique:

Pilot SMART implementation began in the Niassa Reserve in 2014 following participation at the SMART regional training in South Africa in 2014. The Niassa Carnivore Program (through support from the Wildlife Conservation Network) together with WCS are coordinating this. Discussions are also underway at national level between WCS and the National Parks Agency (ANAC) to rollout a SMART monitoring program at national level.

Uganda:

Test migration from MIST to SMART was completed in 2014 for Queen Elizabeth National Park. Uganda pioneered the LEM tool MIST in the late 1990's thus the willingness of the Uganda Wildlife Agency (UWA) to migrate more than 10 years of monitoring protocols from MIST to SMART represents both a significant milestone as well as a significant undertaking. SMART is anticipated to be rolled out in a phased approach in 2014/2015.

Madagascar:

A national SMART training workshop was conducted by WCS in April 2014 through USAID support for the SCAPES project (a landscape-based partnership between WWF, CI and WCS). This was led by trainers who originally participated in the ABCG-supported SMART workshop in Tanzania in May 2013. UNESCO funding has now been leveraged for a national roll-out in partnership with Madagascar National Parks and development of a national SMART data model and data collection protocol is currently under discussion and being piloted in Masoala National Park by WCS.

Disseminate lessons learned and best practices for SMART implementation

The regional workshops we have conducted with ABCG support have provided an excellent opportunity to solicit interest in and catalyze implementation of SMART across Africa.

The convening power of both the ABCG and the broader SMART Partnership now provides the perfect forum for disseminating harmonized data structures and collating progress on implementation and lessons-learned thus far. In 2015 we will work to develop best practices on SMART implementation and conduct a lessons-learned workshop to feed into this process.

Ongoing Effort

With the number of new sites adopting SMART in Africa increasing, we propose to conduct an assessment of how SMART is being utilized to improve enforcement effectiveness and protected area management in 2014/2015. This will be in the form of a questionnaire, a lessons-learned workshop and the production of a best practices manual for SMART and adaptive management (in partnership with CITES–MIKE and the SMART Partnership).

H.3 WESTERN INDIAN OCEAN

Background

The Western Indian Ocean (WIO) region is characterized by economies and livelihoods that are highly dependent on their natural resources, primarily for fishing, tourism and shipping. Approximately 30 million people in the WIO depend directly or indirectly on the coastal environment for goods and services (MENRT—Seychelles, 2009). Without taking into account the impacts of climate change, the region is already suffering from pressing development issues such as poverty, overfishing, food security and environmental degradation which threaten the economic sectors mentioned above and the livelihoods of its people. Climate change will exacerbate existing social and environmental issues and present an additional challenge for the sustainable development of the region due to sea level rise, coral bleaching and the livelihoods of coastal communities that depend on local fisheries for food security.

"Responding to climate change will require the integration of adaptation into all aspects of policy development" (Watkins 2007). Islands and coastal zones throughout the world are receiving growing attention not only for vulnerability to climate change and their important natural resources, but also for their potential as demonstration models of sustainable development. Many island and coastal countries have started exploring new solutions to take action on adaptation. Within this context, the WIO region can become an example of how to integrate climate change adaptation, ecosystem management, clean energy and sustainable livelihoods.

Regional frameworks such as the Nairobi Convention and Indian Ocean Commission have identified integrated management of coastal and marine resources as a common concern for all the south west islands of the Indian Ocean and the coastal countries of East Africa. The marine and coastal ecosystems of these countries share common characteristics. Their respective coastal environments are under similar human pressures and are experiencing the effects of similar natural phenomena in the region, including climate change, the influence of marine currents at the south of the Equator and the impacts of monsoon winds or cyclones which particularly affect the island countries. Collaboration between institutions, information exchange and the sharing of experience and resource management tools will enhance regional cooperation and economic integration.

On September 3, 2014, at the Global Islands Partnership (GLISPA) meeting, Seychelles, Tanzania, Madagascar and Mauritius launched the Western Indian Ocean Coastal Challenge (WIO-CC) and announced a series of national commitments that will advance a regional vision to promote action for climate-resilient development that achieves effective conservation of biodiversity and enhanced livelihoods and economies for coastal communities in the Western Indian Ocean region. The WIO-CC has now reinforced its credibility and anchoring within the WIO region while the key Government departments involved start to have increased understanding about the need of this initiative. The WIO-CC is led by the Government of Seychelles which remains committed to leading the operationalization of the Challenge by progressively engaging political leaders at the highest level in the region to make tangible commitments to launch it. The European Union is still providing support to the Challenge through Indian Ocean Commission ISLANDS Project.

The Consortium of the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C), in partnership with inter-governmental organizations, is now officially committed to

providing technical support to the WIO-CC as per the MoU (between WIO-CC and WIO-C) signed during the 3rd WIO-CC meeting in Seychelles in July 2013. As the WIO-CC was initially inspired from the Micronesia Challenge and Caribbean Challenge Initiative promoted through the Global Island Partnership (GLISPA), GLISPA ensured the facilitation of this 3rd meeting and Micronesia Challenge has sent a representative to share their experience to the WIO.

Seychelles and Mauritius have agreed to launch the WIO-CC during the UNSIDS 2014 meeting, and Comoros and Madagascar have expressed agreement for this and are willing to join the delegation for Samoa. In the meantime, the Nairobi Convention COP7 has endorsed a decision (Decision CP7/16) on the Western Indian Ocean Coastal Challenge that requests parties and other partners to support and encourage participation in the WIO-CC. All this constituency building is strengthened by the successful establishment of the WIO-CC Communications Working Group which has developed the WIO-CC Communication Strategy, while the scoping for the establishment of a regional trust fund was achieved and will form a mechanism to provide sustainable financing to support achievement of the WIO-CC commitments.

The Nature Conservancy—Progress Report

Support the Government of Seychelles to expand its Marine Protected Area

The Seychelles government committed to establish marine protected areas covering 30% of its 1.4 million square kilometers of Exclusive Economic Zone by 2020—half of which will be no-take zones (more than half the land territory is already protected as natural parks and reserves). This will be the second-largest marine reserve in the Indian Ocean. Half of the reserve will be replenishment zones (i.e., no extractive activity) including the first replenishment zone within a premier tuna-fishing area. Currently, just one percent of Seychelles' marine areas are under protection. At the same time, Tanzania committed 15% of its coastal and marine ecosystems as marine protected areas and 25% of its mangrove under protected forest reserves by 2020. For commitments from other nations (see document titled '*Western Indian Ocean Coastal Challenge—Draft Regional Commitments*'). At the same time, the Indian Ocean Commission (Secretary General Jean Claude de l'Estrac) committed IOC's continued support for the WIO-CC through projects that will contribute to the regional vision.

In early August 2014, the Marine Spatial Planning (MSP) Steering Committee was established and held its inaugural meeting. The Committee guides the MSP process and is facilitated by TNC. The document, titled '*An Overview of the Seychelles Marine Spatial Planning Initiative*' contains more information on the MSP process in Seychelles, with a basic messaging leaflet of the same here.

A draft zoning proposal was developed and presented at various stakeholder meetings and workshops in July and August 2014, allowing for continued refinement through consultations.

In August 2014, TNC facilitated a MSP workshop (a third one) with more than 40 local participants including strong representation from government, fishermen, NGOs, industry and oil development. The workshops resulted in important integration with ongoing United Nations Development Program-Global Environment Facility (UNDP–GEF) projects and expansion of the scope of our planning work to include the interests of commercial and local fisheries, oil and gas development, marine transportation,

tourism and biodiversity conservation. Planned outputs are now an MSP design that includes all of these interests as well as accompanying decision support tools.

The Seychelles Cabinet of Ministers approved the MSP Memorandum, authorizing development of the Plan, and recommended that their Blue Economy Inter-Ministerial Committee be responsible for making recommendations to the Cabinet on decisions around the MSP initiative.

Draft multi-objective marine zones will be presented to the MSP Steering Committee in November.

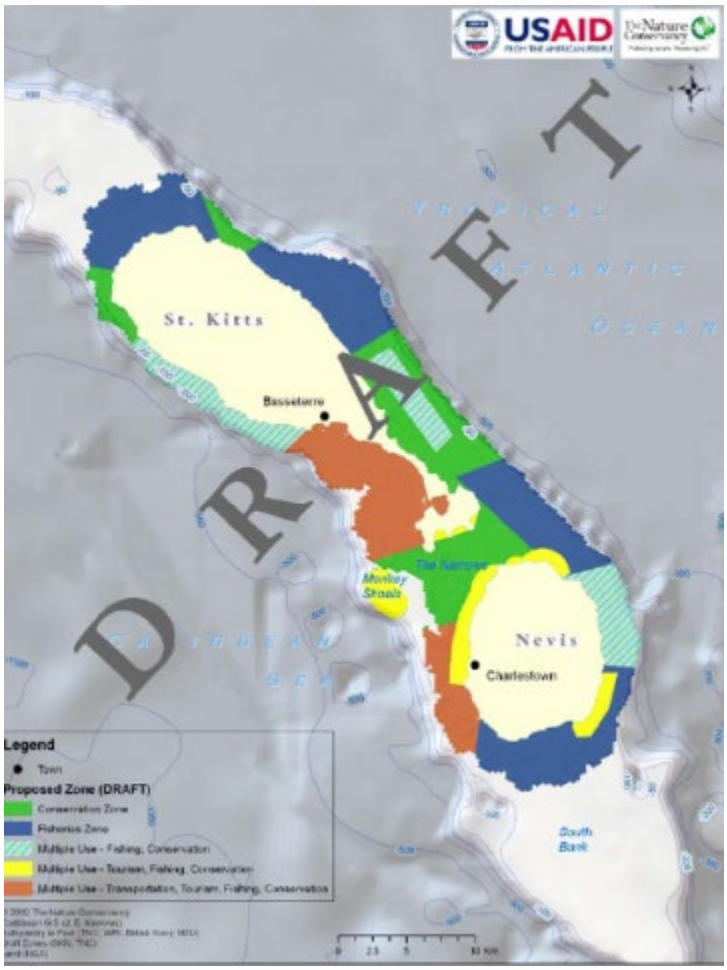

Figure 20. An example of a draft MSP zoning map for St. Kitts and Nevis in the Caribbean. Image courtesy of The Nature Conservancy.

Improve awareness among WIO-CC technical focal points and high-level Government officials of the three mainland states and garner support for the WIO-CC launch in 2014 among WIO-CC members

The three mainland states of Kenya, Tanzania and Mozambique have been involved in discussion to further promote the conservation of the Mozambique Channel. Through these discussions, they

became more aware of WIO-CC, WIO-C, and the importance of an ecosystem approach to ocean conservation[1].

Technical staff from these three countries also engaged effectively in WIO-CC through participation in the WIO-CC definition of goals, objectives and targets.

During the UNSIDS Conference in Samoa, TNC in collaboration with GLISPA and IOC organized a session sharing lessons between the different Challenges in response to requests by partners involved in the WIO-CC and the Aloha+ Challenge. Representatives from government and organizations involved in the Micronesia Challenge and the CTI (Coral Triangle Initiative) participated and shared their experiences in establishing large multi-country initiatives. It was a vibrant and very useful discussion during which TNC provided an overview of the structure and origins of the Micronesia Challenge, and reiterated by CTI. This was particularly useful for the participants in the group from Tanzania/Zanzibar, as they are working through how to build the WIO-CC amid various difficulties. One main question they kept coming back to was how to ensure ongoing political commitment to the initiative, and particularly amongst an economically and culturally diverse collection of countries. Given the short time available in this session, GLISPA was asked to convene a more structured 1-2 day meeting to talk through and collect shared lessons and strategies.

Terms of reference and documentation from technical meetings held with mainland countries on WIO-CC preliminary goals and targets

The preliminary goals and targets submitted thus far are referenced in the draft document titled '*Western Indian Ocean Coastal Challenge Draft Regional Commitments*'. The Republic of Tanzania decided that it will be represented by the island of Zanzibar.

Wildlife Conservation Society—Progress Report

Continued support to the development of a Conservation Trust Fund / sustainable finance and resource mobilization mechanism for the WIO-CC

The Western Indian Ocean Coastal Challenge (WIO-CC) is a governmental platform organized "to galvanize political, financial and technical commitments and actions at national and regional levels on climate change adaptation, promoting resilient ecosystems (marine and coastal resources), sustainable livelihoods and human security". To assist in the sustainable implementation of its mission the WIO-CC is investigating the feasibility of establishing a conservation trust fund (CTF) to support the achievement of this vision, and to meet the financial needs for the planning and management of coastal and marine resources for WIO-CC participating countries. The proposed fund for the Western Indian Ocean (WIO-CC CTF) is expected to provide the funds to cover immediate and recurrent costs for the

[1] NOTE: WWF funding for this activity was curtailed due to a shortfall in the amount obligated in FY2014. For this reason WWF reports no activity here, as stated in its revised work plan of May 2014.

environmental challenges facing the WIO-CC countries, with a particular focus on challenges facing the member countries from climate change and growing development pressures.

WCS led a feasibility assessment of the development of the WIO-CC CTF which culminated in the release of a report in January 2014. This report was presented and validated during the 4th WIO-CC technical meeting in May 2014. The assessment relied on data gathered from three principal sources: a thorough review of existing literature; consultations and interviews with experts and stakeholders from the region, and working with CTFs worldwide; and, a strategic planning session carried out with participants attending the third meeting of the WIO-CC on July 16, 2013 in Victoria, Seychelles. The report is available here, entitled '*Developing a Conservation Trust Fund For the Western Indian Ocean Coastal Challenge (WIO-CC)*'.

The report provides an overview of sources that can be used to further advance the WIO-CC CTF mission, vision, and strategy. This overview includes an extensive summary of 9 existing or forthcoming CTFs in the WIO region, or worldwide, with a specific review of the mission, scope, funding source, and legal and institutional framework, technical and management support, and lessons learned from each fund.

The next steps for the proposed WIO-CC CTF should be to identify and appoint a Project Manager or Coordinator to lead and maintain the continuity necessary to fully realize the expectations of the CTF. The creation of the WIO-CC CTF Working Group should result in the elaboration of the governance and legal structure for the CTF, and ultimately enable the CTF to seek initial operational funds. The Project Manager and Working Group should also produce a CTF design that is aimed at fostering collaboration among existing and emerging funds within the region. Ultimately, it should also develop a budget and proposal for the creation of the CTF that is realistic and specific to the identified mission and scope. The proposed WIO-CC CTF will need an initial budget to cover at least the first year, and preferably first two years of operational costs.

Support travels with awareness raising purposes to WIO-CC technical focal points and high-level Government officials (minister, director-level) of the 3 mainland states

WCS supported travel of Government representatives from Kenya, Mozambique and Tanzania to attend the 4th technical meeting of the WIO-CC in Mauritius in May 2014. WCS also supported the travel of a representative of Tanzania to attend the launch of the WIO-CC in Samoa at the Third International Conference on Small Island Developing States in Apia, Samoa, in September 2014. Funds were also used to support travel of the WIO-CC / WIO-C focal point and ISLANDS project team leader to attend the WIO-C meeting in Dar es Salaam in June 2014.

Figure 21. Fishing boat—Baie des Dunes, Madagascar. Photo by dmitri_66 (CC BY-NC 2.0)

World Wildlife Fund—Progress Report

Undertake country level economic valuation of climate change impacts in relation to food security and economic development for the 3 East Africa mainland states

Overview

In 1998, coral bleaching at an unprecedented scale caused widespread coral mortality across most of the western Indian Ocean, with subsequent consequences for the goods and services provided by these reefs. There is urgent need for governments and stakeholders to come together and take action to combat climate change, conserve biodiversity and promote sustainable livelihoods to build resilience. The Governments of the Indian Ocean islands and Coastal East Africa have signed onto a range of international and regional agreements, projects and activities that address issues including climate change, biodiversity conservation, desertification and sustainable development. The WIO-CC will build on this to ensure that momentum is created for implementation of these agreements over a long time scale.

During the opening of the Third Technical meeting on WIO-CC held on the 15 to 16 July 2013 in Victoria, Seychelles, Prof. Rolph Payet, Minister for Environment and Energy, Republic of Seychelles, stated: "The Western Indian Ocean Coastal Challenge can become an example to the world on how to integrate climate change adaptation, ecosystem management, biodiversity conservation, clean energy for sustainable livelihoods with development".

For such vision to be achieved, there is a need to facilitate mainstreaming of climate change consideration into national and regional development plans and policies, but also increases the contribution of the international community to the costs of adapting to climate change via various financial mechanisms, such as the Global Environment Facility, or through bi-lateral and multilateral aid agreements. For that to occur, governments and international community need to be convinced of the need to invest more in that direction and they need to understand that quantifying the incremental costs of climate change is instrumental in adding resilience to actions aimed at achieving country's international commitments as well (e.g. Mauritius Strategy, Millenium Development Goals, etc.).

An important tool for identifying and quantifying the incremental costs of climate change on the region's marine and coastal ecosystems and resources, is the economic valuation of climate change impacts, such that the WIO-CC will be able to demonstrate through sound evidence and science-based approaches the real costs of climate change on our marine systems and to various sectors, particularly in relation to food security and economic development. A number of studies have already been undertaken in this regard, providing a basis, but information remains scattered and there is need for further consolidation in order to provide a basis for defining the best strategic direction for the WIO-CC in moving forward.

The WIO-Consortium, which aims to address sustainable management of coastal and marine resources in the region, has committed to support the operationalization of the WIO-CC. The WIO-Consortium has leveraged funds in order to support WIO-CC in developing sound foundations for economic valuation of climate change impacts, and will therefore closely collaborate with the Challenge in establishing such basis, very important for spelling out economically (as well as socially) the importance level of climate change for the WIO marine systems.

Objective

The main objective is to develop the strategic orientations for WIO-CC with regard to economic valuation of CC impacts in relation to food security and economic development. The economic valuation should be related to broader human development areas including social development as these concepts are closely intertwined (education, access to health, services, insecurity, conflict mitigation, etc.)

Scope

The project is divided into two phases. The current work covers the first phase only.

1st phase:

- Compile all the results of previous studies that have been carried out in the region, including interpretation of the level of impact (scope, scale, etc.) of CC at economic level, including a gap analysis of studies/assessments that still need to be done;
- Consolidate analyses/visions related to economic valuation of CC coastal impacts (and related costs of adaptation) at the level of the region to make a case for the WIO-CC; and
- Develop the best strategic orientations for WIO-CC when moving ahead in that field.

2nd phase:

- Hold a capacity building session on economic valuation methodologies;
- Present the strategic orientations for WIO-CC to stakeholders from the region (including the WIO-CC focal points);
- Improve the strategic document based on feedback received.

The 1st phase is expected to be largely a desk-study of existing documents and information, including interviews and interaction with stakeholders as appropriate.

Activity Progress and Discussion

The title of this activity in the proposal is: "Undertake country level economic valuation of CC impacts in relation to food security and economic development for the 3 East Africa mainland states." However, following consultations with WIO-CC and key partners (ISLANDS, WIO-C members, etc.), it was deemed more appropriate to develop the strategic orientations for WIO-CC with regard to economic valuation of CC impacts in relation to food security and economic development. In fact, given the need to carry out a regional-level economic valuation (certainly focusing on few key areas for the first years), it is logical to provide the right pathway and strategy to WIO-CC since the onset.

The economic valuation should be related to broader human development areas including social development as these concepts are closely intertwined (education, access to health, services, insecurity, conflict mitigation, etc.). Its scope is as follow:

- Compile all the results of previous studies that have been carried out in the region, including interpretation of the level of impact (scope, scale, etc.) of CC at economic level, including a gap analysis of studies/assessments that still need to be done;
- Consolidate analyses/visions related to economic valuation of CC coastal impacts (and related costs of adaptation) at the level of the region to make a case for the WIO-CC; and
- Develop the best strategic orientations for WIO-CC when moving ahead in that field.

As this activity is carry-forwarded from FY13, it took several months before WIO-CC countries took a consensual decision to move ahead with this activity (mid-first semester 2014).

ABCG funds are not sufficient to cover all the financial needs for this first phase, so WWF will fill the gap during a no-cost extension from ABCG until March 2015. WWF plans to present the consultants' findings to any WIO-CC meeting within that period.

The consultancy firm which has been selected is FutureWorks™, based in South Africa.

FutureWorks is already working full steam on the matter and should come back to us with the following deliverables:

- A report summarizing the current status of knowledge with regard to the economic impacts of climate change in the coastal and marine environment of the Western Indian Ocean, by November 7th, 2014. This report will include :

- an interpretation of the compilation of all the results of previous studies that have been carried out in the region regarding the level of impact (scope, scale, etc.) of CC at economic level, including a gap analysis of studies/assessments;
- a consolidation of analyses/visions related to economic valuation of CC coastal impacts (and related costs of adaptation) at the level of the region to make a case for the WIO-CC;

- Recommendations and a strategic vision for the further direction of the WIO-CC with regard to addressing climate change impacts and the impacts thereof on ecosystem integrity, livelihoods and socio-economic development in the region, by November 28th, 2014.

As the findings of this work will be key and strategic for WIO-CC, we propose to set up a review committee to provide inputs to the consultants' work as they progress through it. It is proposed that the findings of this work be presented to the related various audiences. This of course will depend on the decision of the review committee. The aim is to seek further recommendations from various experts and practitioners to enhance the approach knowing that climate change impacts regional-level economic valuation exercise (combined with national-level exercises later) is a complex endeavor.

Figure 22. Madagascar—Traditional fishing pirogue. Photo by Jonathan Talbot, WRI/ (CC BY 2.0)

Support travels with awareness raising purposes to high level Government officials (minister/director-level) of the 3 mainland states

WWF funding for this activity was curtailed due to a shortfall in the amount obligated in FY2014.

H.4 FAITH & CONSERVATION

Background

Religious faith plays an enormous role in the lives of many people around the world, helping to provide to them an understanding of the world around them and lighting a moral path to follow in times of uncertainty, need or joy. The intersections of faith and conservation are an important element of the Dar Vision on the Future of Biodiversity in Africa, in which experts from throughout Africa came together to articulate multidimensional approaches to biodiversity conservation in Africa. Previously, AFR/SD had commissioned a report on religion and conservation in Africa. This work, *From Practice to Policy to Practice: Connecting Faith and Conservation in Africa*, was written by Amy Gambrill of International Resources Group (a subsidiary of Engility Corporation), which explores some of the current practices of connecting faith and conservation, provides information on some of the faith groups doing conservation work, and presents several case studies on faith-based conservation. ABCG held a thematic meeting in June 2011 to discuss opportunities, challenges and examples of conservation and faith groups working together.

In September 2012, twenty-seven long-term plans of action on the environment were launched by Christian, Muslim and Hindu faith groups in Sub Saharan Africa. These plans had been drawn up over the previous 18 months and focus on education and sustainable land and water management in an initiative pioneered by The Alliance of Religions and Conservation (ARC) and supported by the Norwegian Government and the World Bank.

The meeting to launch the long-term plans was also supported by ABCG. In 2014, JGI and WWF, as well as the United Kingdom NGO the Alliance of Religions and Conservation, continued to work together and with faith groups in Africa in the areas of environmental education and wildlife trade.

Environmental Education

The Faith Based Environmental Education workshop held in Kampala in March 24–25, 2014 was a very successful event bringing together 120 stakeholders from faith groups, governmental bodies, Ministries, UN agencies, and NGOs from Uganda, Kenya, Tanzania, Ghana and Rwanda. It was organized by ARC, JGI and the Uganda Faiths Network on Environmental Action (UFNEA).

An initial summary document with highlights from the workshop was prepared by JGI and shared with partners. This is titled '*Faith-Based Environmental Education Stakeholders' Workshop in Uganda—Workshop Highlights*'. The workshop proceedings are published in the report titled '*The Faith Based Environmental Education Stakeholders' Workshop Report*'.

JGI Output

Our outcome for this task was to develop and deepen our relationships with the faith communities to achieve shared conservation goals. To this effect, JGI in Uganda signed an MoU between JGI Uganda and the Catholic Diocese of Fort Portal to conserve Lake Nkuruba Nature Reserve, Kabarole District. This Nature Reserve previously connected to Kibale Forest National Park and had some Chimpanzees, but due to deforestation and destruction of the forest corridor, there are currently no chimpanzees.

JGI was also invited to participate in the Anglican Bunyoro Kitara Diocese's annual youth camp which brings together youth from different parts of the country. During the conservation week of this camp, the youth watched JGI Environmental Education Videos and received materials on environment, HIV/AIDS and sanitation. They were excited and promised to initiate Roots & Shoots groups on returning to their Districts. Bulindi Catholic Church actively participated in JGI's Bulindi Public Awareness Campaign Project. Through working with Rev. Fr. Anthony Bingi, the Bulindi Parish Priest in Bunyoro Kitara Diocese, JGI Uganda successfully conducted community sensitization meetings that reached out to 1,500 households with conservation messages on forest conservation and human wildlife coexistence.

Through a visit to A Rocha Uganda by JGI Education Officer, the concept of Farming God's way was introduced in Bulindi Parish of Bunyoro Kitara Diocese where 5,000 banana and 7,000 pineapple suckers were distributed to farmers. JGI assisted farmers with sustainable farming techniques integrated with faith values on farming God's way with guidance from Rev. Fr. Anthony Bingi, Bulindi Catholic Church priest.

There are ongoing discussions with the Education Officer of Bunyoro Kitara Diocese, Rev. Jacob to initiate JGI Roots & Shoots activities in the over 100 Sunday Schools in the diocese. The schools have already received JGI Uganda's Environmental Education teacher's guides and posters.

There are also ongoing discussions with the Uganda Muslim Teachers' Association (UMTA) and the Uganda Muslim Supreme Council about a possible integration of Environmental Education into curriculum for Madrassa schools in Uganda.

Figure 23. Participants join the guest of honor Hon. Flavia Nabugere Munaaba (Front row seated in the middle) for a group photo.

Alliance of Religions and Conservation Output

There was both interest and enthusiasm to initiate or to develop further faith based Education for Sustainable Development (ESD) in the participants various countries.

Kenya who initiated this work are now completing a trainer of trainers guide for taking faith based ESD into informal education.

Tanzania have held various trainings for Christian and Muslim teachers and are setting up demonstration schools.

Uganda working with Jane Goodall Institute are in discussions with the National Curriculum Committee to see how this initiative could be integrated into the national curriculum. Projects, trainings and demonstration sites have been set up in Christian and Muslim schools in various regions of Uganda and have received enthusiastic support from Head teachers and Faith Leaders. At a meeting in Japan in May Bishop Nathan Kyamanywa from Uganda shared his interest in the ESD programme, and the work the Jane Goodall Institute had been doing in his diocese. His enthusiasm, gratitude and conviction of the outreach of such projects was a real witness of the potential of such partnerships.

The participants from Rwanda and Ghana had their first introduction into faith based education for sustainable development and are looking to see how this might be introduced to faith partners and networks in their respective countries.

In addition to the above outcomes we are delighted to see that the Faith networks that have been established over the last 18 months in Uganda, Kenya and Tanzania are engaging in this initiative in both formal and informal educational settings.

At an International Workshop on Faith-based Sustainable Land Management (October 14–16, 2014), it was encouraging to see how this program is extending its reach into the school and youth population and so enriching the work on Faith Based Environmental Education.

In November ARC and KOEE (Kenyan Organisation on Environmental Education) exhibited its work on the faith based ESD initiative in Nagoya, Japan at the 2014 UNESCO World Conference on Education for Sustainable Development, titled '*Faith-based education for sustainable development, Kenya*'.

Figure 24. Mary Bellekom (ARC) presents the ESD toolkit for teachers to participants. The toolkit integrates faith values into ESD and it is meant to be used by primary school teachers.

Wildlife Trade

The program of collaboration between African religious leaders (Catholic and Muslim) and Chinese religious leaders (Daoist and Confucian) has developed very well over the last few months. As can be imagined, the bureaucratic issues surrounding the visit by a young woman Daoist to Africa and ensuring that she could make blog reports and work with Chinese TV and African media outlets on documentaries and reports were considerable. However by September all the plans were finalized and the visit took place in October covering Uganda and Kenya. ARC staff attended to assist in the introductions and development of the program. Earlier in June the Daoist, Confucian and African religious leaders had meet at Ise in Japan during the ARC event held there and agreements had been worked out which then were officially approved by their respective bodies.

The public service announcement has been delayed because *WildAid* have yet to confirm that they will make this. Instead we have developed a partnership with Xinhua, the Chinese news agency and they have been the primary media partner helping to cover the visit and the insights gained in both Chinese

and English medium papers and broadcasts. A documentary is currently being developed based on this visit and the issues it has raised.

It is intended that African religious leaders will be invited to China next year for a major meeting in May in the city of Hangzhou.

Ms Li, the young Daoist, created a blog in Chinese which was then carried by a wide range of Chinese social media networks both in Africa and in China (http://www.libingbing.net/). This was supplemented by the Kenyan media also covering her visit which enabled outreach to go beyond just the Chinese communities in Africa.

The joint statements of concern about the illegal wildlife trade were presented to HRH The Duke of Edinburgh last year and this year we were asked to share them with HRH The Prince of Wales (see *Britain's Prince Phillip hosts first Chinese Confucian delegation*). As a result, Daoist and Confucian leaders are now involved in the Prince of Wales and Duke of Cambridge's new program against the illegal wildlife trade and a formal discussion of the religious role in TCM and the illegal wildlife trade will be the focus of a meeting co-hosted by ARC and HRH the Prince of Wales on 13th November.

Ongoing Effort

Education

The training is well underway and each group is looking at the adaptation of the material. In Tanzania the new faith network is looking to take the original text and instead of producing a book they are looking at a series of themed leaflets incorporating Tanzanian information, pictures etc. This is taking time and there is the question of how they will reproduce such material. In late November there is a teachers training workshop in Moshi that will hopefully continue this development.

In Uganda training is underway and schools are working with themes developed in the toolkit and with the help of JGI the network have been doing a curriculum review by National Curriculum Development Centre in Uganda.

Curriculum Review by NCDC Expert: A review of the ESD teacher's toolkit was done by a curriculum expert from the National Curriculum Development Centre (NCDC) in Uganda. The expert found the themes in the toolkit in line with the Uganda Primary School Curriculum, but needed to be contextualized to the learning environment in Uganda. Curriculum review meetings were held with the NCDC expert, JGI, UFNEA and teachers. These meetings are still ongoing to enrich the toolkit with local examples and activities from Uganda. This is aimed at contextualizing the toolkit to Ugandan schools. The toolkit will then be piloted before it is fully adapted.

10

ABCG Outreach and Communication

In FY2014, ABCG organized and ran the following meetings and events:

1. On the Wings of Robots: The Ups and Downs of Using UAVs for Conservation
2. Highlights from the Integrated Freshwater Conservation and WASH M&E Workshop

In addition, ABCG organized and ran the following brown bags:

1. The Role of the NGO Chimpanzee Conservation Center in the Protection of the Haut Niger National Park GUINEA
2. Recent Activities and Challenges facing Garoua Wildlife College in Cameroon—Training Wildlife Professionals in Central and West Africa
3. Saving Great Apes: Measuring Success in Changing Attitudes & Behaviors
4. Conserving a Species, while Caring about Individuals
5. An Account of the Life-Changing Realities of Rhino Poaching
6. WildLeaks, the First Secure & Anonymous Platform for Wildlife Crime Whistleblowers
7. The Open Parks Network: An Open Knowledge and Learning Platform for Conservation
8. What have the forest elephants ever done for us?
9. Informed land use decision making with the Marxan Decision Support Tool
10. Technocrats, financiers and carbon; a thorny alliance with communities and conservation?
11. Improving the conservation of Cross River gorillas with mobile based law enforcement monitoring
12. Post-crisis conservation in Madagascar—where to from here?

Outreach and communications

As of December 15, 2014, the ABCG listserv had reached 1,450 active subscribers. We have produced consistent, quality event, career opportunity and newsletter messages on the listserv every week, for over 85 individual messages sent in FY2014.

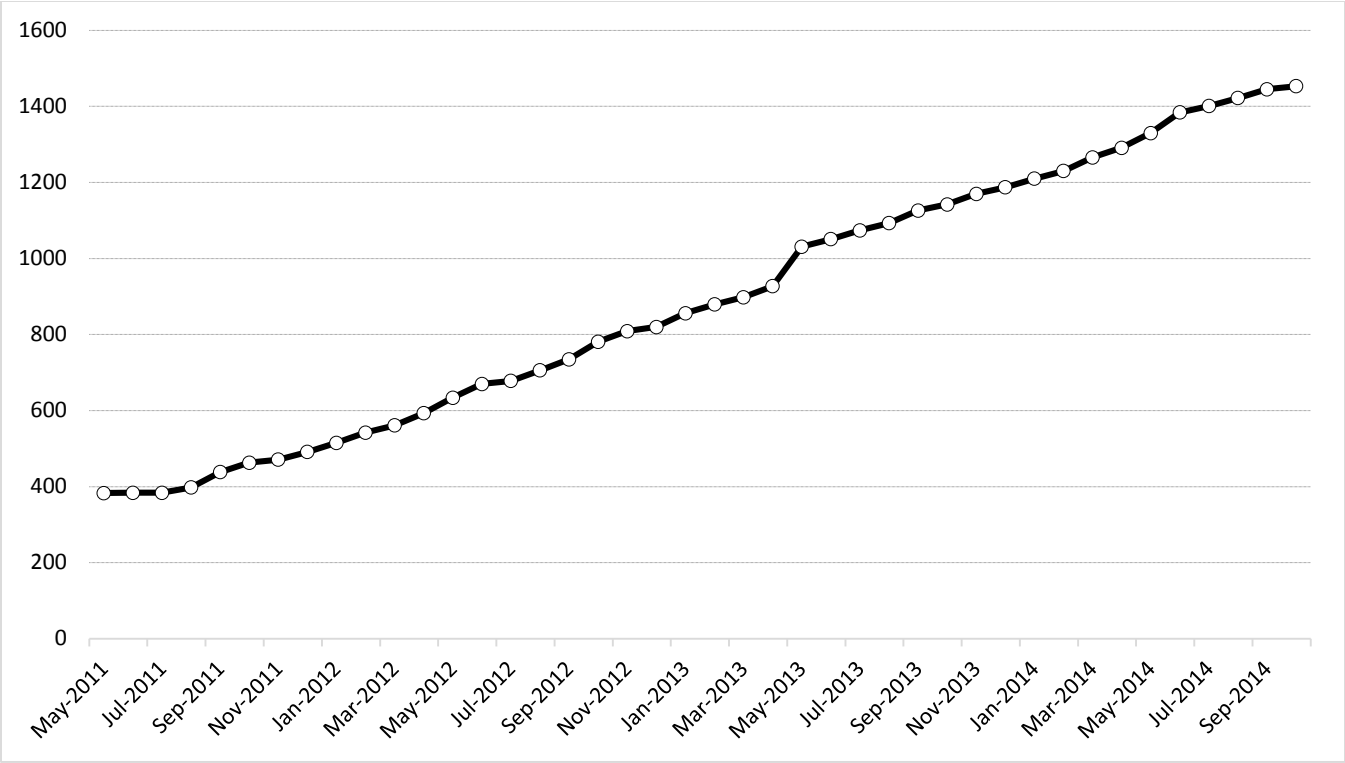

Figure 25. ABCG's email subscriber numbers have grown steadily.

- Our Twitter followers have increased by 55%, from 255 followers at the close of FY13 to 394 followers in December 2014. On Facebook, our "likes" have increased from 436 at the close of FY13 to 602, an increase of 38%. Again, consistency of postings as well as linking to our members and their posts have increased our followers and likes.
- We produced a large number of reports and fact sheets this year, with more than 30 individual documents included in our FY14 Annual Report to USAID. Those include full technical reports, fact sheets, maps and supporting documents.

In FY2015, ABCG looks forward to further sharing our achievements from 2014. We will work together using a variety of approaches to tackle emerging and high-priority issues affecting biodiversity in Africa.

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Appendix

RESEARCH, REPORTS AND ANALYSIS:

1. Position Statement on the Community Private Partnership: Community - Save Valley Conservancy Partnership
2. Zimbabwe Parks and Wildlife Management Authority: Commercial Revenue Model Assessment
3. Status of Wildlife and Conservation Areas in Zimbabwe and Recommendations for Recovery
4. Using Innovative Land Conservation Tools in Africa to Protect Land, Enhance Resource Management and Improve Community Livelihoods
5. A Farmer in Africa: Limiting Property Rights
6. A Farmer in Africa: Overlapping Property Rights
7. A Farmer in Africa: Balancing Property Rights With National Needs
8. Forest Management Planning (FMP) Process
9. How to Establish Participatory Forest Management
10. Understanding of the Two Concepts: Participatory Forest Management; Forest General Management Plan
11. Community Engagement in the Participatory Forest Management in Kigoma, Uvinza, Mpanda and Nsimbo Districts—Proceedings of the Workshop held in Kigoma Town
12. LAFR action Plan Framework
13. Terms of Reference for the Greater Katavi Mahale Gombe – Ecosystem Technical Team
14. The Greater Gombe Mahale Katavi Ecosystem: Long-term Strategic Plan for Greater Mahale Gombe Katavi Ecosystem
15. GKMGE: Workshop Report for the Integrated Management Planning Training and Strategic Plan Presentation
16. Considering the human response to climate change significantly changes the outcome of site-based and species vulnerability assessments
17. Questionnaire documenting unplanned human responses to changes in weather and climate, and subsequent impacts on biodiversity
18. Human adaptation strategies to climate change - Lit review
19. Human Responses to climate change - Interview Data

20. Using Marxan as a tool to make scientifically sound decisions considering trade-offs involving conservation actions and development under climate change: A Case Study from the Kilimanjaro Ecosystem, Kenya/Tanzania
21. Trade-offs in conservation area design: A case study from the Murchison Semliki landscape in Uganda
22. Enabling Maasai women to access improved cook stoves in Mbirikani Group Ranch, Kenya
23. Validation of a remote sensing method of estimating grazing impacts in northern Kenya rangelands
24. Soil Carbon Dynamics in Northern Kenya Rangelands
25. Impacts of grazing management on biodiversity in northern Kenya rangelands
26. HIV/AIDS and Environment: A Training Guide for Conservation Organizations
27. Report on a Training Workshop on HIV & AIDS and Environment
28. USAID and ABCG—Integrated Indicators for Freshwater Conservation and WASH
29. ABCG Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators
30. Freshwater Conservation and Water, Sanitation, and Hygiene Integration Guidelines: A Framework for Implementation in sub-Saharan Africa
31. USAID and ABCG—Integrated Indicators for Freshwater Conservation and Wash Workshop Report
32. Technical Training Manual for SMART 3.0
33. SMART: Implementers and Trainers' Workshop—Final Report
34. An Overview of the Seychelles Marine Spatial Planning Initiative
35. Western Indian Ocean Coastal Challenge Draft Regional Commitments
36. Developing a Conservation Trust Fund For the Western Indian Ocean Coastal Challenge (WIO-CC)
37. The Faith Based Environmental Education Stakeholders' Workshop Report
38. Faith-Based Environmental Education Stakeholders' Workshop in Uganda—Workshop Highlights

CLIMATE CHANGE ADAPTATION ACTIVITY A

Abstract of the completed draft scientific paper on the integration of the human response, submitted to *Diversity and Distributions* in November 2014:

Despite the fact that human actions are largely responsible for the processes that threaten biodiversity, when it comes to climate change, human responses (i.e. mitigation or adaptation actions) are almost entirely ignored in species and site-based conservation vulnerability assessments. Here we assess if, and by how much, priorities identified by standard species and site based climate vulnerability assessments change when the potential for a human adaptive response is considered. We used recently published assessments based on climate driven projections of: i) shifts in the geographical distributions of 164 restricted-range avian species; ii) species turnover in 331 Important Bird Areas (IBAs); and iii) human vulnerability to climate change across Sub-Saharan Africa, to assess (a) the spatial relationship between human vulnerability and species and site-based vulnerability assessments and (b) how prioritization for conservation action of species and sites based on their relative vulnerability changed when integrated with the human vulnerability data. We found a non-significant relationship between the areas identified as containing the most vulnerable species and sites when considering the direct impacts of climate change (i.e. impacts that result from physical changes associated with climate change) and the areas identified containing the most vulnerable human communities. Hence, we recorded substantial changes in the relative priority of individual species and sites for conservation actions, with more than one-fifth of species and one-tenth of sites moving from 'low risk' to 'high risk' when the potential human response to climate change was considered. The potential indirect threat (i.e. impacts that originate from human actions that are initiated or exacerbated by climate change) posed by climate change to these species and sites would therefore be overlooked using standard vulnerability assessment methodologies that only consider the direct impacts of climate change. The lack of any spatial relationship between the direct impacts of climate change on species and sites and where human responses could drive significant indirect impacts, such as land use change, is an important finding. Failure to consider human adaptation responses to climate change will result in systematically biased assessments of vulnerability that fail to recognize and focus conservation action on species and sites potentially imperiled by indirect climate change induced changes. However, we also show that the integration of spatially explicit proxies for the potential location and magnitude of the human adaptation response is not impossible and can add valuable information to existing vulnerability assessment methodologies.

REFRESHER TRAINING OF SMART FOCAL POINTS IN GABON

FORMATION DE RECYCLAGE DES POINTS FOCAUX SMART

10-14 MARS 2014

SMART est un programme présent dans les 13 parcs du Gabon et qui permet de recueillir et analyser les données collectées par les écogardes sur le terrain. Ce système conçu sur le processus du management de la performance est un outil de gestion effective et adaptative qui concourt à une prise de décision objective dans les activités de lutte contre la criminalité en matière d'extraction des ressources naturelles. Ce système nécessite la présence d'un technicien appelé "point focal" sur chaque site afin d'assurer la gestion quotidienne de l'ensemble du protocole y compris le logiciel SMART et les différents rapportages.. Le travail des points focaux ne se limite pas à l'utilisation du logiciel. Il est également d'appuyer le conservateur dans sa stratégie de surveillance et de servir de relais auprès des écogardes pour s'assurer que les données sont correctement collectées sur le terrain.

Les points focaux ont un rôle clé dans le bon fonctionnement du programme et il est nécessaire qu'ils soient régulièrement formés. En juin 2013, les points focaux ont participé à une formation sur l'utilisation du logiciel SMART.

La formation actuelle est un recyclage des points focaux ainsi qu'une introduction des dernières innovations technologiques qui participent à une meilleure valorisation du logiciel SMART

- **Objectifs de la formation**

Cette formation avait 4 objectifs principaux :

1. Présenter la nouveauté de SMART 2.0 : le plug-in Cyber Tracker
2. Recadrer la procédure SMART
3. Résoudre les problèmes récurrents rencontrés par les Points focaux
4. Renforcer leur capacité technique (cartographie, connaissance de la loi, connaissance d'autres projets de l'ANPN, formation)

Tous les points focaux sauf celui des Plateaux Batéké étaient présents (voir liste en annexe). Etaient invités en plus Serge Mibambani des Eaux et Forêt et Emmanuel Oganda Tonga de l'ANPN.

- **L'acquisition de nouvelles connaissances**

1. Bases juridiques

Les PF ont assisté à une présentation de Serge Mibambani (Minef) sur les lois et décrets régissant la faune et la flore. Les participants ont pu éclaircir leurs connaissances du droit auquel ils sont confrontés quotidiennement.

2. SMART 2.0 et Cyber Tracker

Lors de sa présentation, Emma Stokes a permis aux PF de découvrir la nouveauté principale de SMART 2.0, le plug-in Cyber Tracker. Cet outil permet de collecter les données directement sur un support électronique, assurant ainsi une collecte plus standardisée et une transmission des données aux PF très rapide.

Les PF ont appris à programmer le modèle de données pour Cyber tracker, à collecter les données sur l'appareil et à télécharger les données de l'appareil.

3. **Traçabilité de l'ivoire**

Stéphanie Bougeois (ANPN) a présenté le projet qu'elle conduit sur la traçabilité de l'ivoire. Les points focaux auront un rôle d'appui technique aux écogardes et de relais d'information vers S. Bourgeois

Dans le cadre de cette formation, les PF se sont entrainés à reconnaitre l'âge d'une carcasse d'éléphant grâce à des photos et à prélever un échantillon sur une carcasse de chèvre, testant ainsi le matériel et le protocole qui est utilisé par les écogardes pour ce projet.

4. **Outil d'analyse en cartographie**

Dans ce module, Hélène Blanchard a rappeler les bonnes pratiques de cartographie dans SMART pour obtenir des cartes de meilleure qualité possible.

Elle a ensuite présenté deux outils de cartographie : la sélection par localisation et le clip, qui tous deux peuvent permettre d'analyser les données provenant de la base de données SMART par exemple. La démonstration s'est faite sur ArcGIS et QGIS simultanément.

Les PF ont pu s'exercer sur l'un ou l'autre des logiciels, QGIS ayant été installé sur les ordinateurs de ceux qui n'avaient pas ArcGIS.

- **Les discussions**

1. **Difficultés rencontrées par les PF**

Le problème majeur rencontré par le plus de PF est le faible niveau de qualité de la collecte de données et le remplissage des fiches par les écogardes. Les fiches manquent souvent de détails qui sont pourtant très importants pour l'analyse.

Le deuxième défi majeur est l'insuffisance d'implication de certains conservateurs dans la mise en œuvre et le suivi de la qualité de l'ensemble de la boucle de rétroaction du système SMART. Ce faible encadrement des conservateurs obère considérablement le fonctionnement de SMART sur certains sites. Il s'en suit que certains écogardes bâclent la procédure de collecte de données et la qualité du rendu s'en trouve largement biaisée.

Un troisième problème auquel sont confrontés les PF est relatif aux dates d'envoi des rapports mensuels à Libreville. Selon la procédure, les PF doivent envoyer leur rapport révisé et approuvé par le conservateur le 5 du mois. Hors ils reçoivent une pression des conservateurs de prendre en compte les missions sortant du terrain le 4, le 5 ou même le 6, ce qui les amène à envoyer leur rapport après la date limite et qui provoque du retard au niveau de la compilation du rapport total à Libreville.

2. **Nouveau format de rapport**

Une discussion a porté sur le nouveau format pour les rapports de patrouille et mensuels. Des nouveaux formats ont été proposés à la sortie de la discussion et ont été présentés à l'ANPN pour validation.

3. **Formation de recyclage des écogardes**

Pour préparer la formation de recyclage que devront faire les PF dans les prochains mois, une discussion a été menée sur le contenu et la manière de réaliser ce recyclage. Pour les sites nécessitant une formation plus complète, une proposition de contenu a été faite, sinon il a été recommandé que les PF participent aux missions des écogardes.

- **Les recommandations**

1. **Recommandations aux PF**

- Participer aux missions de l'ANPN sur le terrain au moins une fois tous les deux mois, plus si nécessaire, pour renforcer les compétences des écogardes *in situ* en matière de collecte des données sur les activités de lutte contre le braconnage.

- Présenter les résultats du mois écoulé au conservateur et aux écogardes. Les PF sont plus que des secrétaires, ils sont les assistants techniques du conservateur.

- Faire des cartes claires et épurées pour les rapports.

2. **Recommandations aux coordinateurs SMART**

- rappeler aux conservateurs que sont comptées dans le rapport du mois les missions sortant du terrain le 3 et avant, les missions suivantes étant comptées pour le mois suivant.

Rappel de la procédure : les PF acceptent les missions jusqu'au 3, envoient leur rapport mensuel le 5 et la coordination de Libreville envoie le rapport total à l'ANPN le 10.

- Renforcer les capacités en SIG des PF lors d'une formation complète, avec mise à niveau pour les débutants.

- Installer ArcGIS sur tous les ordinateurs des PF.

3. **Recommandations aux conservateurs**

- Insérer un paragraphe sur SMART dans leur rapport mensuel envoyé à la direction de l'ANPN

- Organiser une réunion mensuelle avec le PF, les écogardes et les partenaires pour discuter à partir des données de SMART sur la stratégie de surveillance à avoir les mois suivants. Le PF envoie à Libreville le compte-rendu de la réunion avec une liste émargée par tous les participants.

- Respecter la procédure de traitement des données SMART : transmettre fiches de collecte et GPS avant le 3 de chaque mois et valider le rapport mensuel avant son envoi à Libreville le 5.

4. Recommandations sur l'organisation de la formation

- Prévoir un jour ou deux de rattrapage avant la formation pour mettre à niveau ceux dont le niveau est plus faible.

- Etre au moins 2 organisateurs, un s'occupant de la logistique au bureau et un s'occupant du bon déroulement de la formation avec les participants.

- Se réunir avec la logistique avant la formation pour préparer ensemble le planning des besoins de véhicule et de repas.

- Organiser le transport des participants vers le lieur de formation.

Conclusion

La formation a atteint ses objectifs de renforcement de capacité des points focaux. Ces derniers sont repartis avec de nouvelles techniques à mettre en place sur leur site, les activités habituelles ayant également été redéfinies.

Les coordinateurs ont maintenant la tache de suivre l'évolution les points focaux, de vérifier que les activités se déroulent normalement sur site, notamment pour les PF recrutés récemment.

DRAFT FRESHWATER AND WASH M&E INDICATORS

Table 2. Draft Freshwater and WASH M&E Indicators

Indicator	Rationale	Notes
IR 1: Increase first time and improved access to sustainable water supply		
1.1 % of Households (HH) with access to improved drinking water source	Standard indicators used to measure water coverage.	According to UNICEF, an improved water source is an infrastructure improvement to a water source, a distribution system, or a delivery point, which by the nature of its design and construction is likely to protect the water source from external contamination, in particular from fecal matter.
1.2 # of people with access to an improved drinking water source		
1.3 # of reported incidences of water borne diseases	Access to improved, sustainable water combined with improved hygiene behaviors should lead to a reduction in the reported incidences of water-borne diseases	
1.4 # of water points with 0 fecal coliforms per 100/ml	Standard indicator used to measure quality of water at a storage location prior to human consumption.	
1.5 # of village water user committees active at least 3 months after training	A longitudinal study is necessary to ensure that community members responsible for operation and maintenance of WASH facilities function over time.	Active is defined as water user committees with well-defined roles, meets regularly, has a caretaker/maintenance person, and an active fee collection system (as needed).[USAID and OFDA]
IR 2: Increase first time and improved access to sanitation		
2.1 # of people gaining access to improved sanitation facility	Standard indicators that measure sanitation at the community-level.	
2.2 (a) # of people practicing open defecation		
2.2 (b) # of open defecation areas in a village		

Indicator	Rationale	Notes
2.3 # of communities certified as "open defecation- free" (ODF)		ODF status indicates that all households in a village have access to a sanitation products and services.
2.4 # of sanitation entrepreneurs	This indicator is measuring the enabling environment for sanitation businesses and also based on the critical assumption that a dynamic private sector reflects demand and will contribute to decreasing the lack of sanitation.	
2.5 # of sanitation products and services available locally	WASH participants supported that there is a need to measure first if there are sanitation products and services available and then if they are being used.	
2.6 % of population with improved access to sanitation products and services		
2.7 # of people regularly using improved sanitation products and services		
IR 3: Increased adoption of key hygiene behaviors		
3.1 (a) # of people practicing hand washing at critical times	Standard indicator for measuring hand-washing behavior	
3.1 (b) # of functional hand washing facilities	Based on the critical assumption that an important cause of non-compliance may be lack of functional facilities.	
3.2 % of HH with soap (or ash) and water at a hand washing facility commonly used by family members	Based on critical assumption that proximity of hand washing facilities with soap or ash will facilitate hand washing practices at critical times.	
3.3 (a) # of liters of drinking water disinfected with point- of-use (POU) treatment products	Standard indicator to measure treatment of water at household-level.	
3.3 (b) % of HH that treat drinking water with POU treatment products		

Indicator	Rationale	Notes
3.4 % of HH in target areas purchasing and correctly using recommended water treatment technologies	Standard indicator used to measure change practices at the household level	
3.5 (a) % of HH using safe water handling practices	Measure of adequate water handling practices to minimize contamination	
3.5 (b) # of households storing their drinking water safely in clean containers	Necessary to separate household water treatment and safe storage because those who practice correct treatment may not store treated water properly and vice versa.	
3.6 # of reported incidences of water borne diseases	Access to improved, sustainable water combined with improved hygiene behaviors should lead to a reduction in the reported incidences of water-borne diseases	
IR 4: Improved governance of water resources - VALUE ADDED INDICATORS		
Gender		
%/# of institutions with accessible sanitation facilities for both sexes (including disabled)	This indicator is getting at the lack of clean and private sanitation facilities for women that allow for, among other things, menstrual hygiene. Cross- cutting because it is a factor for girls not attending school, etc.	
# of laws, policies or procedures drafted, proposed or adopted by community to promote gender equality in integrated FW-WASH project participation and benefits	Tracks the extent to which gender equality is addressed at the community-level.	
% of women in decision-making positions in community- based WASH and freshwater conservation	This indicator attempts to measure women's participation in decision-making around freshwater conservation and WASH.	for example - in water resource user associations (WRUAs)

Indicator	Rationale	Notes
# of HH reached with WASH and conservation program intervention (sex disaggregated)	This indicator differentiates female-headed households (FHHs) to ensure interventions are reaching this target population, based on critical assumption that FHHs have greater vulnerability.	
%/# of women involved in the planning, design or implementation of integrated WASH-freshwater conservation interventions	This indicator measures women's participation in the planning, design and implementation of interventions.	
Governance and Policy		
# of people aware of WASH or freshwater conservation(FC) related-policies	Tracks opportunities for targeted communities to receive information and engage on dialogue related to WASH/FC related-policies.	
# of forums carried out to engage the community to debate and influence WASH and FC policies		
# of people satisfied with WASH/FC interventions being implemented	Tracks community awareness of the connection between FW/WASH interventions and perceived level of satisfaction	Household Surveys
# of community managed institutions focusing on integrated WASH-FC	Tracks if community-level decision making institutions that enable freshwater resource and WASH considerations to be made together and the inclusiveness, effectiveness and transparency of these	
# of community level decision making bodies with progressive and transparent policy and budget processes		

Indicator	Rationale	Notes
% of representation by marginalized groups in community level decision making bodies related to WASH or FC	processes	additional indicators to consider instead (or with): # of new or improved laws that facilitate affirmative action for marginalized groups; # of legislative and policy changes enhancing rights of marginalized groups and promoting conservation of freshwater sources
# of people participating in accountability mechanism (define as level and quality) for integrated WASH-FC		
# of changes or successful negotiations due to citizen participation		
# of marginalized communities articulating and voicing demands for WASH and FC		
# of spaces and mechanisms for institutionalized participation in policy formulation, planning and implementation	Measures the opportunities available for decisions made (at the community level or other) to be brought to government processes	
# and type of financial incentives designed to facilitate better (improved) access to WASH services and products	Measures the available types of financing to enable WASH service implementation and long-term adoption- missing linkage to FW conservation aspect	
% of water provision services provided by public authorities	Tracks the connections between the functions of governance systems related to WASH-FC and on-the- ground WASH services	
% of water provision services maintained by public authorities		
# of community-based enforcement mechanisms or authorities established with the mandate to ensure water access rights and use in target regions (across a hierarchy of effectiveness)	Tracks if there are mechanisms in place to ensure equitable access to WASH-FC services	

Indicator	Rationale	Notes
% of water points/water supply utility that is non- revenue	Tracks the proportion of non-revenue water to metered/tariff-based water sources as an indicator for service delivery for need-based populations	
Community Capacity		
% of community member groups involved in the management of freshwater resources	Measures community capacity to participate in WASH-FC management - ranging from awareness, to involvement, training and technical knowledge	
#/% of water management committees trained in management and maintenance of water and sanitation infrastructure/CBNRM		
% of community members understanding and acknowledging co-management roles, responsibilities and obligations for riparian catchment		
#/% of communities able to renew, replace and rehabilitate their water infrastructure		
#/% of WMC/private operators functioning 3+ years after project completion	Tracks the opportunities for community members to use WASH-FC conservation to develop sustainable income-generating opportunities	
# of water-based enterprises (related to WASH and FC)		
% of households accessing and utilizing water for production (e.g. crop, livestock)	Measures community capacity to generate income from improves access to water for production, alternative livelihood opportunities, or other finance options due to WASH-FC interventions	
#/% households engaged in alternative livelihood activities		
Access to credit, diversity of income (varied units of measure applicable)		
Peace + Protection		

Indicator	Rationale	Notes
# of water-related conflict incidences reported over time by the community	Measures capacity of communities to monitor, report and manage conflict.	
% of community reported water-related conflicts incidents successfully resolved		
Ratio of new cases of community reported water-related conflict incidents to cases resolved in the previous three years (efficiency)		
# of available mechanisms to resolve disputes/% of population trained in conflict resolution		
% of watershed with clearly determined land rights title	Access to water is clearly linked to land tenure. Conflict over land is far more likely to escalate and become violent when land tenure and resource rights are weak or insecure.	
% of people aware of individual water resource user rights	Measures that people are able to articulate their individual rights related to the use of water	
% of community with equitable access to water	Based on critical assumption that competition over limited and changing water resources is an acute source of conflict.	
# of community water users (proportion to available water sources)		
**Considering additional indicator to address resilience of water supply, systems, and management entities to extreme events*		resilience to floods, droughts, political instability, etc..
Youth		
% of youth in decision-making positions in community- based WASH and FC structures	These indicators measure youth's participation in decision-making and	Importance here is how we define youth (e.g. all persons between the age of 15 to 24)

Indicator	Rationale	Notes
% of leadership positions held by youth in CBNRM and WASH committees	leadership.	
# of youth employment	These indicators gets at widespread youth unemployment, and the opportunity for WASH to provide opportunities.	
#/% of youth taking up WASH businesses		
% of youth trained in life-skills	This indicator is a measure of progress in implementing life-skills based education through FW/WASH interventions.	
IR 5: Improved freshwater ecosystem functionality, including water quality and natural flow regime		
5.1 (a) reduction of turbidity levels and total suspended solids (TSS) of water (where levels are impairing ecological function)	Turbidity and TSS most visible indicators of water quality.	
5.1 (b) % difference between turbidity level and 5 or >5 NTUs	WHO/UNICEF drinking water standard	nephelometric turbidity units (NTU) - critical assumption: water sources with <5 or less NTUs have higher quality drinking water and also higher ecological function
5.2 reduction in level of phosphates and nitrates (in mg/L)	Nitrogen and phosphorous in excess amounts can cause significant water quality problems, this indicator is measuring for acceptable levels.	research needed to determine standard
5.3 (a) changes in the abundance and distribution of indicator species	The level of pollution in water can be indicated by the species living there.	
5.3 (b) # of E. coli and other fecal coliforms per 100 ml of water found at water source	Used as indicators of possible sewage contamination because they are commonly found in human and animal feces.	

Indicator	Rationale	Notes
5.4 natural variability of the system and continuous stream flow are maintained (including sedimentation patterns)	This indicator is looking at stream flow trends over time to measure change and climate variability.	- Magnitude: the volumetric flow rate or level; for example, 100 cubic meters per second - Timing: the time of year during which a flow event occurs; for example, August - Duration: how long an event lasts; for example, 3 weeks - Frequency: how often the event occurs; for example, every 2–3 years - Rate of change: the rate at which flows or levels increase or decrease in magnitude over time; for example, a 0.2 meter-per-day flood recession rate
5.5 ratio of total renewable fresh water resources to fresh water withdrawal rate	Measuring human-derived pressures on freshwater systems (surface and groundwater).	Freshwater withdrawals refer to total water withdrawals, not counting evaporation losses from storage basins.
5.6 % change in water flow oxygenation rates/temperature regimes	Standard indicator for water quality -- dissolved oxygen is essential for survival of all aquatic organisms.	
5.7 % reduction in color (Pt-Co units. 'Platinum Cobalt' or Hazen units)	Visual comparison method to characterize a natural water's organic content.	
5.8 # of physical barriers obstructing migratory movements of species	Indicators of habitat connectivity and fragmentation	
IR 6: Enhanced integrity of terrestrial and freshwater biodiversity		
6.1 % of native vegetative cover	Focus on extent and change in extent of native vegetative cover which contributes to deeper root systems and groundwater, better protection for surface water, more secure habitat for biodiversity, etc.	
6.2 changes in the diversity index of native flora and fauna	Standard biodiversity indicators.	abundance, distribution, richness, and composition) higher relative abundance, distribution, richness and composition of flora and fauna

Indicator	Rationale	Notes
6.3 distribution and abundance of invasive species	Indicator measuring trends in number of invasive alien species which constitute a leading threat to freshwater and terrestrial biodiversity.	

PROVISIONAL WORK PLAN OF ACTIVITIES FOR THE EXTENSION PERIOD

B.2 High Conservation Value Forest Assessments

Large mammal mapping updates

Refinement of regional maps for elephants (*Loxodonta cyclotis*), chimpanzees (*Pan troglodytes*) and gorillas (*Gorilla gorilla gorilla*) based on newly updated models for chimpanzees and gorillas, and higher resolution distribution model for elephants, are underway. In addition to new model data, the delineation of candidate HCV areas in the concession for each will reflect incorporation of locally important criteria, including ensuring connectivity with populations protected in Conkouati-Douli National Park.

Exploit maps in landscape analysis SW Gabon

Landscape analysis is the advanced stages; national data and priority areas have been combined with local features, test approaches to identifying HCV areas and optimal conservation set-aside areas at the concession level, with stakeholder feed-back in the process.

Compilation of results and lessons learned and production of case study report for landscape case study

This will be produced on completion of the landscape study.

Policy brief on use of the data and the Aquatic biodiversity prioritization approaches

Currently an aquatic ecosystem Atlas for Gabon is being developed by TNC, which makes use of the fish data-base developed by WWF. A policy brief on prioritization will be developed following further discussions with TNC.

List of communication materials, briefing notes and reports to be produced, with responsibilities defined following technical work session

Hand-outs have been drafted on approaches to identifying national priority areas for apes and elephants. On completion of the landscape analysis, at least three briefing notes to be produced will cover: 1) Compiling reference data, 2) establishing thresholds for HCV, and 3) development of a spatial planning system.

Stakeholder workshop for final communication and results

A workshop is currently being developed to bring together government and other stakeholders to review the case study and the information collected in support of the process.

Task C: Land Tenure, Rights & Governance

African Wildlife Foundation

- Replication of model in the Hwange and Gwayi areas in Matabeleland North and South Provinces is on track and ongoing with AWF using other resources. Development of the Hwange National Park General Management Plan is underway and set to be complete by March 2015. This activity serves as the anchor around which neighbouring communities will be engaged to develop conservancies in partnerships that are recommended in the commercial model development for Save Valley Conservancy.

World Resources Institute

- *A Farmer in Africa: Securing Property Rights*. This video is now being finalized and will be released in the coming months. It speaks to the issue of documenting and formalizing customary tenure arrangements.
- *A Farmer in Africa: Exercising Property Rights*. This video is still in the works. WRI has prepared a draft script ready for the illustration stage. The video speaks to the benefits of secure land rights. It will be available in mid-2015.

The Jane Goodall Institute

- Develop a map that identifies core areas within the LAFR's that are high in biodiversity and need to be conserved.
    - The plan was to implement the Marxan workshop in September 2014. This activity was not implemented as planned. This activity will take place during the extension period. Specifically, the Marxan model will be run so as to identify key areas within the LAFR's with high biodiversity value and should be protected with no off take of resources permitted. This activity is being coordinated with the Marxan Task [*F.3 Woodlands, TRADE-offs and Climate Change*].
- Discussions and meetings to bring the Uvinza District Council and Nsimbo District Council up to speed on ongoing efforts to establish LAFR's is ongoing. The proposed Masito LAFR and villages surrounding it fall, within Uvinza District and it is supposed to take over the process from the Kigoma District Council, own it and continue the finalization of the reserves, establishment of the GMP and implement follow-on JFM process with communities. Though most staff members were transferred from Kigoma District and are familiar with the process, a number of other team members are not. While the Uvinza District Council continues to support efforts by JGI and other stakeholders in the LAFR process, it has not yet shown leadership in these efforts, but we are hopeful this will happen in the coming months. In Nsimbo District, while its administrative boundaries do not include the proposed Tongwe West LAFR, it does include Tongwe East Forest reserve, a key forest reserve that was part of Mpanda District previously. The forest resources and challenges to these resources from movement of people and cattle, make Nsimbo a key stakeholder in this process.

A key activity held to bring the two districts in the loop of ongoing efforts and support them in taking on leadership, was the formulation of the Inter-District Steering Committee. A coordination meeting in which progress from districts, and challenges are brought forward and discussed took place between July 20th and 22nd, facilitated by TNC, JGI and FZS.
Further details on the ongoing efforts of bringing the Uvinza District Council and Nsimbo District Council up to speed on ongoing efforts to establish LAFR's will be reported in the coming months by TNC, JGI and FZS.

The Nature Conservancy

- Undertake outreach (including fact sheet development, presentations, meetings with local/regional/national government and partners) to inform the general public and government about the GKMGE:
  A fact sheet manuscript has been drafted and is undergoing peer review at the time of reporting.

F.1 Climate Change Adaptation

Activity A:

- Submission of manuscript to *Diversity and Distributions* in November–December 2014.
- Draft an op-ed piece to raise awareness after manuscript is accepted for publication.

Activity B:

- Complete analysis of peer-reviewed and grey literature, as well as analysis of key informant/focus group interviews. We will have a meeting within the next month to discuss how best to analyze the data further, with the intention that this task will be complete by end December 2014.
- A brief case study summarizing the methodology will be developed, and used in combination with the data for outreach. We intend to complete this task by end January 2015.
- Communications and outreach for this work will likely begin once we have all the data analyzed and a case study developed. We will use the various channels of all partner organizations to promote this work. This will likely begin at the end of January 2015.
- Workshop: Originally proposed as a workshop with stakeholders in Africa, given time and funding constraints, this will instead be conducted in Washington DC. It will be used to discuss findings, how to effectively use them in conservation planning efforts, and how best to move forward with this project in the next 2–3 years. We intend to hold the workshop during the last week of February 2015.

F.3 Woodlands, TRADE-offs and Climate Change

- The draft scientific paper on the findings in the Murchison–Semliki Landscape exploring the distribution of opportunity costs of conservation between stakeholders is currently in review by co-authors and intended to be submitted to a journal in December 2014.
- Data development and analysis refinement for the Masito–Ugalla landscape (JGI) in response to feedback solicited at the first workshop. Revisions include a new deforestation analysis covering the period from 2002–2013, community mapping of wildlife and illegal activities, updated mining licenses, modification of district boundaries and development of a chimpanzee habitat health index. A second workshop will be held in Kigoma, Tanzania in February 2015.

F.4 Clean Energy and eco-charcoal

African Wildlife Foundation

Documentation of piloting experience will be done during the remaining FY2014 no cost extension period. This will capture lessons and experience of the beneficiaries of the installed clean cookstoves. This documentation will also be used in reaching out to a number of individuals, including decision makers.

The Jane Goodall Institute

Promote briquettes production and use as an alternative source of fuel and identify on-farm residues that can be used by farmers for making briquettes:

- Promotion of briquettes and their production has not yet taken place. This will take place once the contract is signed with ARTI Energy, which will be implementing these activities. Briquettes will be piloted in Kigoma-Ujiji, because a majority of the urban dwellers rely on charcoal for cooking.
- Reaching out to national level decision makers to inform policy formulation on clean energy:
  - Outreach to national level is still outstanding and will be pursued during the extension period.
- Ten awareness meetings held within Kazuramimba, Kalinzi, Illagal and other target villages:
  - Contracts for TaTEDO and Arti-Energy finalized that include the following deliverables:
    - Awareness meetings held within Kazuramimba, Kalinzi, Illagala and other target villages.
- Plan for integrating improved technologies into institutions developed:
  - Contracts for TaTEDO and Arti-Energy finalized that include the following deliverables:
    - Implementation plans for integrating improved technologies into households and institutions developed.

- Guides by Arti and TaTEDO on the processes they have used and final recommendations on identification and piloting of clean energy techniques:
    - Contracts for TaTEDO and Arti-Energy finalized that include the following deliverables:
        - Guides to be developed on the processes they have used to pilot these technologies, as well as final recommendations on identification of appropriate clean energy technologies and piloting them.
- Improve coordination and create partnerships among organizations and institutions:
    - We are improving coordination and partnering with some of the organizations that work on energy technologies. For example, we will be signing a contract with ARTI Energy to introduce improved household stoves, briquettes and institutional stoves. They will also be involved in raising awareness on the benefits of improved stoves in villages and institutions. We are hopeful that with JGI facilitating ARTI Energy to initiate projects in a few villages and schools, this will provide an opportunity for scaling up into a larger area, given the expressed need for these kinds of technologies in this area.

F.5 Grazing Management and Carbon Sequestration

Subtask 1.0: Complete Soil Carbon Baselines

Preliminary Habitat Map:

- In building up on previous efforts funded by ABCG and others in enhancing the tracking the impact of Northern Rangelands Trust's (NRT) rangeland management activities, a consultant has been identified and contracted to undertake preliminary habitat imagery to improve modelling of soil carbon sequestration and tracking rangeland health in 11 NRT member conservancies using LANDSAT imagery. This data collection activity has been re-scheduled to early January 2015 and is expected to take 40 days.

Subtask 2.0: Rangeland Health Baselines

Carbon Project Partnership:

- Opportunities for carbon project partnership between NRT conservancies and the private, research and development, public institutions are yet to be accomplished, probably with much expectation that TNC will provide the lead in actualizing the carbon project.

H.1 Large Scale Land Acquisition

World Resources Institute

WRI has completed the research on land acquisition procedures in Tanzania and Mozambique. A draft report has been prepared which captured the principal research findings and recommendations. The report includes a number of tables and charts of the land acquisitions procedures. The draft report is

currently under internal review and will be finalized before the end of the FY2014 no-cost extension. WRI is currently developing a slide deck on the research findings and recommendations. WRI is in discussions with ABCG about presenting the research results at an ABCG event as well as presenting the findings at a conference in the Philippines on land acquisition in Asia and Africa.

African Wildlife Foundation

A field assessment and survey on LSLA processes in Ethiopia, with recommendations on how best to safeguard biodiversity conservation. In addition to the new assessment, the team will also conduct a comparative analysis between the Ethiopian experience and the Tanzania analysis. This will be used to develop a suite of recommendations that could serve as best practices for future large scale land acquisition ventures in these and other countries.

- This output is only focused on Ethiopia; it, however, experienced delays due to security concerns in the Gambela region. As such work is ongoing, with assessments based on inputs from Addis Ababa stakeholders that an AWF consultant has interviewed.

A White Paper to be presented at an appropriate international land conference as a power point.

- The paper was partially written as part of the 2014 World Bank Conference on Land & Poverty, based on the Tanzania assessment, but still awaits completion of Case Study 2—Ethiopia.

A simplified summary of FAO Voluntary Guidelines provisions that is user friendly and easy for government and local communities to follow and understand.

- This output will commence once AWF has done the assessment report on Ethiopia.

AWF's lead on this task will also co-author with other ABCG task group members various outreach materials that will be disseminated as fact sheets, white papers, technical reports, and through joint participation at conferences and meetings.

To date, AWF has developed the Scope of Work, hired a consultant, Sue Mbaya—www.sm-associates.org, and commissioned the work to start. The activities are still ongoing and will be completed by 31 December 2014.

H.2 SMART Law Enforcement

Best practices for SMART implementation developed and disseminated:

- With the number of new sites adopting SMART in Africa increasing, we propose to conduct an assessment of how SMART is being utilized to improve enforcement effectiveness and protected area management in 2014/2015. This will be in the form of a questionnaire, a lessons-learned workshop and the production of a best practices manual for SMART and adaptive management (in partnership with CITES-MIKE and the SMART Partnership).

H.3 Western Indian Ocean

Undertake country level economic valuation of climate change impacts in relation to food security and economic development for the three East Africa mainland states

The slight change in this activity is that it won't be for the mainland states only but a work that will set foundations for econ valuation of climate change in general for the WIOCC.

As this activity is carry-forwarded from FY13, it took several months before WIO-CC countries took a consensual decision to move ahead with this activity (mid-first semester 2014).

ABCG funds are not sufficient to cover all the financial needs for this first phase, so WWF will fill the gap during a no-cost extension from ABCG until March 2015. WWF plans to present the consultants' findings to any WIO-CC meeting within that period.

The consultancy firm which has been selected is FutureWorks™, based in South Africa.

FutureWorks is already working on the matter and should report with the following deliverables:

- A report summarizing the current status of knowledge with regard to the economic impacts of climate change in the coastal and marine environment of the Western Indian Ocean, by November 7th, 2014. This report will include :
- Recommendations and a strategic vision for the further direction of the WIO-CC with regard to addressing climate change impacts and the impacts thereof on ecosystem integrity, livelihoods and socio-economic development in the region, by November 28th, 2014.

H.4 Faith & Conservation

Environmental Education

Recently JGI Uganda received the report on the review by a curriculum expert at the Dussent Education Consultancy, Uganda. It was very encouraging and the material is now being adapted for Uganda through consultation with a team of teachers.

The draft Ugandan toolkit is thus ready to be piloted in selected faith schools in Uganda.

Objective

Working in the Kampala area of Uganda targeting 8 Christian and Muslim schools, the goal will be to:

- Give a training workshop for teachers and faith representatives using the draft Ugandan toolkit;
- Pilot eco projects in the 8 schools using the methodology outlined in the toolkit. These projects would centre around water, WASH, energy and waste.

JGI, ARC / A Rocha Uganda will work closely on this project and will also give and receive regular feedback from the Ugandan Faith Network on Environmental Action (UFNEA) and the curriculum support experts.

Output

Training and pilot school reports from JGI, ARC and A Rocha Uganda will outline the results of the training and piloting of the Ugandan draft ESD toolkit. These will be shared and reviewed with UFNEA and curriculum development experts. The reports will inform plans for the next steps to be taken by ARC, JGI and partners to further implement the development and outreach of the Ugandan faith-based ESD toolkit.

Faith-based wildlife protection in East Africa

Drawing on WWF's field experience working with faith leaders to stop wildlife trafficking, as well as ARC's extensive projects with religious institutions on sustainability in East Africa, this paper will assess whether wildlife protection programs led by faith leaders significantly change public attitude and behavior.

Objective

To examine environmental programs run by faith organizations, in particular those funded by ABCG that promoted wildlife protection and calling for the end of wildlife trafficking, in order to determine the effectiveness of such interventions.

Output and Conclusions

- Assess outputs in comparison to goals, leadership sustainability, and continued efforts and commitments.
- Analyze whether such programs can measurably prove the efficacy of faith-based wildlife protection programs in Africa.
- Apply any conclusions from existing literature survey.
- Determine whether such programs have the capacity to significantly change attitude and behavior among the public.

Draw a conclusion on whether ABCG funded faith-based strategies improved wildlife conservation outcomes, and based on the literature survey, whether increasing the number of such efforts can create the needed long term change in attitude and behavior towards wildlife and nature.