AFRICA BIODIVERSITY COLLABORATIVE GROUP
FINAL REPORT

Biodiversity Analysis and Technical Support (BATS)

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

August 2015

USAID
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ACRONYMS

ABCG	Africa Biodiversity Collaborative Group
ACODE	Advocates Coalition for Development and Environment
AFR/SD	Bureau for Africa, Office of Sustainable Development
ARC	Alliance of Religions and Conservation
AWF	African Wildlife Foundation
BATS	Biodiversity Analysis and Technical Support
CARPO	Central Africa Regional Programme Office
CAWM	College of African Wildlife Management
CC	climate change
CI	Conservation International
CBO	community-based organization
DRC	Democratic Republic of Congo
EID	emerging infectious diseases
EPIQ II	Environmental Policy and Institutional Governance Indefinite Quantity Contract II
FM	forest monitor
FSC	Forest Stewardship Council
FY	fiscal year
GKMGE	Greater Katavi–Mahale–Gombe Ecosystems
GMDC	Grand Mayumba Development Company
HCV	high conservation value
ICCB	International Congress for Conservation Biology
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
JGI	the Jane Goodall Institute
KOEE	Kenya Organisation for Environmental Education
LSLA	large-scale land acquisition
LAFR	local authority forest reserve
MSP	marine spatial planning
MSSP	Maasai Stove and Solar Project
M&E	monitoring and evaluation
NDVI	Normalized Difference Vegetation Index
NGO	non-governmental organization
NRM	natural resource management
NRT	Northern Rangelands Trust
ODK	Open Data Kit
PA	protected area
PADDD	protected area downgrading, downsizing, and degazettement
PHE	population, health and environment
REDD+	reducing emissions from deforestation and forest degradation with climate change mitigation
RSPO	Roundtable on Sustainable Palm Oil
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SAWC	Southern African Wildlife College
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

UAV	unmanned aerial vehicle
UIA	Uganda Investment Authority
ULC	Uganda Land Commission
UNDP-GEF	United Nations Development Program-Global Environment Facility
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USFS/IP	United States Forest Service International Programs
VCS	Verified Carbon Standard
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-United States
ZPWMA	Zimbabwe Parks and Wildlife Management Authority

Executive Summary

INTRODUCTION

ABCG is a consortium of seven United States-based international conservation non-governmental organizations (NGOs) which has received primary 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). The consortium members, which contribute a portion of annual funds, include: 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 mission is to help increase the effectiveness of USAID AFR/SD 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.

Through this framework, ABCG implemented activities on a number of major themes, broken into 21 tasks and sub-tasks over the life of the award (Table 1 gives task timeframes). During the first three years of the ABCG–BATS agreement period, ABCG consisted of the aforementioned seven members plus the International Union for Conservation of Nature, and jointly worked on tasks including:

- Biodiversity Assessment and Path Forward (Facilitating Discussions on the Dar Vision for the Future of Biodiversity in Africa)
- Managing Extractive Industries for Biodiversity Conservation
- Analyzing Biodiversity Conservation and Governance to Prevent Conflict and Crisis
- Supporting Country 118/119 Operational Plans Biodiversity and Tropical Forestry Assessments
- Forecasting and Analyzing Conservation Needs and Building Capacity on Critical Issues
    - Global Climate Change Adaptation
    - Climate Mitigation–REDD workshops
    - HIV/AIDS and Conservation
    - Food Security
    - Emerging Issues
- Private Sector Alliances and Conservation

As ABCG entered its fifth BATS year (2012), a new group of tasks was amended into the BATS agreement while others were superseded or retired. The new tasks were deemed priorities by the

current seven members through discussions from the Dar Vision process, follow-up workshops, and outcomes from the first phase, as well as through dialogue with the larger conservation community. The new thematic lineup was:

- Task A: Facilitating Discussions on the Dar Vision on the "Future of Biodiversity in Africa"
- Task B: Managing Extractive Industries to Protect Biodiversity
  - High Conservation Value Forest Assessments
  - Risk Assessment for Biodiversity
- Task C: Analyzing Biodiversity Conservation and Governance to Prevent Conflict and Crisis
- Task D: Supporting Country 118/ 119 Operational Plans Biodiversity and Tropical Forestry Assessments
- Task E: Integrating Approaches to Food Security and Biodiversity
- Task F: Addressing Global Climate Change Through Adaptation and Actions in Woodlands, Grasslands and Other Ecosystems
  - Climate Change Adaptation
  - Woodlands and Trade-Offs
  - Clean Energy/Eco-charcoal Technologies
  - Grasslands and Carbon Sequestration(Grazing Management)
- Task G: Bridging the Gap Between Global Health and Biodiversity
  - HIV/AIDS and Conservation
  - Water Sanitation & Hygiene (WASH) and Conservation
- Task H: Forecasting and Analyzing Conservation Needs and Building Capacity on Critical Issues
  - Large-Scale Land Acquisition
  - Delivering a Spatial Monitoring and Reporting Tool (SMART)
  - Coastal Conservation in the Western Indian Ocean
  - Faith and Conservation in Africa

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Summary of ABCG

BACKGROUND

"Biodiversity remains the fundamental basis of Africa's development, and underpins the well-being of current and future generations." ~ ABCG Dar Vision Statement (ABCG, 2008). Yet biodiversity conservation in Africa is increasingly complex as social, economic, and political pressures on biodiversity, land, and natural resources grow. At the same time, resources available to address the myriad threats to Africa's biodiversity are inadequate. In these conditions—complex problems coupled with a scarcity of human and financial capital with which to address them— cooperation among partners is increasingly necessary to achieve the Dar Vision of slowed environmental degradation and biodiversity loss in Africa.

ABCG grew out of the NGO discussion forum created by the Biodiversity Support Program (BSP), a USAID-funded project which operated from 1989 through 2001. As a result of working together under BSP, its consortium members—WWF, TNC, and WRI—began discussing ways to address emerging African conservation issues together, and eventually invited other NGOs to join the conversations. They recognized that the scope of certain biodiversity conservation issues in Africa surpassed the ability of a single institution to address them. In 1999, the NGOs looked for funding to establish a permanent forum for collaboration and discussion. They received a $50,000 grant from the MacArthur Foundation in 2000 and formed ABCG. In subsequent years, ABCG operated with money from additional MacArthur grants, Critical Ecosystem Partnership Fund grants, and NGO member funds.

ABCG received its first USAID funding in 2007, through the BATS Agreement. BATS's goal was to build capacity within AFR/SD, its field missions, and its partners to better incorporate biodiversity conservation into programming through analysis, creation of technical knowledge, and other program support, and to be a strategic planning platform for USAID's biodiversity conservation agenda in Africa. BATS began in 2006 as a multi-partner Bureau for Africa effort comprising Chemonics International Inc. under the Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ II), and the U.S. Department of Agriculture (USDA) U.S. Forest Service International Programs (USFS/IP) under an interagency agreement, before expanding in 2007 to include ABCG. While all three had separate funding and work plans, the BATS entities met regularly with USAID to coordinate activities. 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 augmenting the number of tasks. 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.

ABCG's structure evolved over the years. In 2000, a program manager was hired to coordinate the consortium's work, plan meetings around themes, and disseminate information to African partners and others. A program officer was hired in 2012. The ABCG Secretariat, comprised of ABCG's staff and physical resources, rotated locations several times. The Secretariat was based at AWF from March 2000 to June 2001, at CI from July 2001 to June 2004, at WWF from July 2004 to November 2009, at TNC from December 2009 to September 2012, then at WWF.

Thanks to ABCG member organizations' considerable resources, both in and outside Africa, ABCG has been in a unique position to support USAID Africa Missions and build the capacity of local and national NGOs, government agencies, universities, the private sector, and local communities on key environmental and development issues in Africa.

GOALS AND OBJECTIVES

ABCG's overarching goal has been to support the USAID's Bureau for Africa, Office of Sustainable Development; Africa Missions and African partner organizations to increase their effectiveness to tackle major existing and emerging threats to Africa's biodiversity, and contribute to sound development and security based on the wise use of natural resources and maintenance of ecosystem services.

ABCG's objectives include the following:

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

Table 1. List of Tasks

	Task Name	Duration of Activities (FY)
A	Facilitating Discussions on the Dar Vision for the Future of Biodiversity in Africa	2008–2013
B.	Managing Extractive Industries to Protect Biodiversity	2008–2011
B.1	Mining and Biodiversity in the Democratic Republic of the Congo	2012–2013
B.2	High Conservation Value Forest Assessment and Risk Assessment for Development	2012–2015
C	Analyzing Biodiversity Conservation and Governance to Prevent Conflict and Crisis	2008–2015
D	Supporting Country 118/119 Operational Plans Biodiversity and Tropical Forestry Assessments	2008–2011
E	Integrating Approaches to Food Security and Biodiversity	2011–2013
F.1	Learning By Doing Building Climate Change Adaptation Capacity in Africa	2010–2015
F.2	REDD+ Readiness Workshops	2010–2011
F.3	Understanding Carbon Flux Under Conditions of Climate Change Woodlands and Trade-Offs	2012–2015
F.4	Applying Clean Energy and Sustainable Eco-Charcoal Technology to Address Deforestation as Part of Climate Change Mitigation in East Africa Landscapes	2012–2015
F.5	Grazing Management and Carbon Sequestration in Community Conservancies of Northern Kenya	2012–2015
G.1	HIV/AIDS and Conservation Linkages	2011–2014
G.2	Water, Sanitation and Hygiene (WASH) and Conservation	2012–2015
H.	Forecasting and Analyzing Conservation Needs and Building Capacity on Critical Issues	2012–2015
H.1	Large-Scale Land Acquisitions and Biodiversity Conservation in Africa	2012–2015
H.2	Delivering a Spatial Monitoring and Reporting Tool (SMART) to Improve and Report Effectiveness of Biodiversity Conservation Investments in Central and East Africa	2013–2015
H.3	Addressing Challenges in Coastal Conservation in the Western Indian Ocean	2012–2015
H.4	Faith & Conservation in Africa	2010–2015
H.5	Bushmeat in Eastern Africa	2008–2010
H.6	Environmental Impact of Emerging Infectious Diseases in Africa	2008–2010
H.7	Private Sector Alliances and Conservation	2008–2010

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Task Output and Major Impacts

A: FACILITATING DISCUSSIONS ON THE DAR VISION FOR THE FUTURE OF BIODIVERSITY IN AFRICA

As BATS got underway, the partners saw a need to create a vision for their action. To be effective, such a vision had to build on looking backward to assess past efforts, looking at the present to understand current trends, and looking forward to recognize coming threats and opportunities. The vision also had to draw on the same principle as that underlying ABCG: that conservation in Africa is most effective when different parties combine their intellectual and institutional resources toward the same goals. Armed with this operating framework, ABCG embarked on Task A, the objective of which was to synthesize lessons learned from a BATS assessment of USAID/Africa's biodiversity work and to identify critical themes to inform future biodiversity conservation strategies in Africa.

Collaborators

AWF, CI, JGI, IUCN, TNC, WCS, WRI, and WWF

Dates

FY 2008–FY 2013

Summary of Outputs

- "Scenario Planning for Biodiversity Conservation in Africa: Mapping Future Trends and Interventions in the Next Ten Years." A meeting of Washington, DC-based experts in conservation and international development to draw input on key issues and likely scenarios for biodiversity conservation into the future, with an emphasis on climate change, governance, and security. Washington, DC. May 15, 2008.

- "30 Years Horizon." Workshop assembling experts from across sub-Saharan Africa to review achievements in biodiversity conservation, identify emerging challenges, and articulate a vision for biodiversity conservation in Africa for the year 2025. Dar es Salaam, Tanzania. September 18-20, 2008.

Major Impacts

In 2008, the BATS partners took retrospective and prospective looks at biodiversity conservation in Africa. Chemonics International Inc. produced *Protecting Hard-Won Ground*, a survey of USAID-supported biodiversity and natural resources management interventions in Africa during the prior 30 years.

ABCG took the next step, holding "Scenario Planning for Biodiversity Conservation in Africa: Mapping Future Trends and Interventions for Biodiversity Conservation in Africa Over the Next Ten Years," a meeting at which more than 45 participants brainstormed the question of "What are the priority interventions for biodiversity conservation in Africa over the next ten years?" Attendees generated a suite of broad issues and likely scenarios, captured in *The Future of Biodiversity in Africa: Report from the ABCG Washington Consultation, May 2008*. The meeting also produced a set of recommendations for the incoming Obama Administration on mainstreaming biodiversity conservation with livelihood development.

To refine its perspective, ABCG then took the consultation process to Africa. At the "30 Years Horizon" workshop in Dar es Salaam, 41 African conservation leaders from 12 countries, representing a diversity of institutions, biomes, and natural and social science disciplines, identified emerging challenges and articulated a vision statement for biodiversity conservation in Africa for the year 2025, using ideas from the Washington consultation as a starting ground. The workshop featured the Director of Tanzania's Division of Environment in the Vice President's Office, Eric Mugurusi, who conveyed a statement from the Tanzanian Minister of State for Environment, Hon. Baltilda Burian. *The Future of Biodiversity in Africa—Report of a consultation, 2007–2009* reports on this meeting.

Task A was a seminal development in ABCG's history because it gave rise to the Dar Vision for the Future of Biodiversity in Africa, which since its creation has served as ABCG's guiding principles. The Dar Vision (see below) was distributed to African Environment Ministers and participants at the Fourth World Conservation Congress in Barcelona, Spain (October 2008), at the National Council for Science and the Environment conference in Washington, DC (December 2008), and at the Society for Conservation Biology-Africa Conference in Ghana (January 2009).

DAR VISION

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.

Summary factsheets on the Dar Vision are also available in English, French, and Portuguese.

Recommendations for Future Action:

The *Dar Vision for the Future of Biodiversity in Africa* remains ABCG's guiding framework. ABCG's confidence in this vision was corroborated by the findings of USAID's independent performance evaluation, which concluded that the Dar Vision remains relevant today. ABCG therefore recommends maintaining this course as the consortium enters its next phase.

B: MANAGING EXTRACTIVE INDUSTRIES TO PROTECT BIODIVERSITY:

Natural resource extraction in Africa holds both promise and peril. The continent has a wealth of natural resources, the demand for which has grown exponentially in recent years. Removing these resources from the environment to sell on global markets can generate significant amounts of money for countries to improve the lives of their citizens. Too often, however, this benefit is outweighed by resource extraction's wide-ranging environmental damage and disruption, as well as by corruption, conflict, and economic distortion which accompany the influx of resource revenue.

Task B sought to address part of this problem by creating knowledge to assist conservation actors in engaging with the private sector and governments to reduce the impacts on biodiversity of natural resource extraction industries. ABCG's work focused on emerging trade standards, corporate social responsibility, and partnerships among public- and private-sector stakeholders as tools companies can use to benefit from rising consumer demand for environmentally friendly products. Task B activities began in FY 2008, under ABCG's initial USAID grant. Due to growing interest in the topic, the activities expanded and differentiated in FY 2011 to comprise two sub-tasks, detailed after this section: Mining and Biodiversity in the Democratic Republic of Congo, and High Conservation Value Forest Assessment and Risk Assessment for Development.

Collaborators	***Dates***
AWF, Chemonics International Inc., CI, USFS/IP, IUCN, WCS, WRI, and WWF	*FY 2008–FY 2011*

Summary of Outputs

- *Partnering with Extractive Industries for the Conservation of Biodiversity in Africa: A Guide for USAID Engagement*. Report analyzing options for USAID engagement in Africa for biodiversity conservation in the mining, oil and gas, timber, and fishing industries. Chemonics International and USFS/IP, with reviewing and editing assistance from ABCG-member staff. 2008.
- "Biodiversity Offsets: Pilot Projects and Potential in Africa." Workshop on biodiversity offsets and their potential as a conservation tool in Africa. Washington, DC. May 4, 2009.
- *Building Private-Sector Partnerships for Conservation: Lessons learned from the collaboration between WCS, CIB, and the Republic of Congo in forestry concessions*. Case study examining lessons learned from the Buffer Zone Project/Project for the Management of Ecosystems Adjacent to Nouabelé-Ndoki National Park in the Republic of Congo, a partnership among WCS, the Congolese Ministry of Forestry Economy, and forest-products company Congolaise Industrielle des Bois (CIB) to manage the impacts of logging to the area's wildlife and people. John Poulsen. 2009.
- "Biodiversity Impacts of Chinese Investment in Africa and Opportunities for Conservation." Meeting on new Chinese private interests affecting conservation and biodiversity in Africa. Washington, DC. May 5, 2010.
- "Private-Sector Partnerships for Conservation." Meeting on building constructive partnerships with private-sector interests. Washington, DC. May 6, 2010.

- *Are partnerships the key to conserving Africa's biodiversity? Four partnership case studies between mining companies and conservation NGOs*. Report illustrating conservation outcomes stemming from formalized partnerships between NGOs and mining companies (Figure 1). Rowena Smuts. 2010.
- Spatial analysis of biodiversity and extractive industries in Ghana and Liberia. Maps of areas of biodiversity importance and their overlaps with extractive industries, especially mining concessions. CI. FY 2010.

Major Impacts

The research for John Poulsen's case study, *Building Private-Sector Partnerships for Conservation: Lessons learned from the collaboration between WCS, CIB, and the Republic of Congo in forestry concessions*, yielded several other products. ABCG and Poulsen developed a training module on extractive industry's impacts on and solutions for wildlife and bushmeat trade, called Bushmeat Solutions: Private Sector Alliances and Partnerships. The module was presented at the College of African Wildlife Management in Mweka, Tanzania, in July 2008 (see Appendix 2 p. 24 of the BATS for USAID/Africa FY2008 Annual Report for ABCG). Poulsen also used his research to train young African conservation professionals at the U.S. Fish and Wildlife Service's 2012–2013 MENTOR-FOREST program in Gabon, which focused on mitigating the negative effects of extractive industries on wildlife and forests. The research was also a basis for *Tropical Forest Conservation and Industry Partnership: An Experience from the Congo Basin* (2012), which Poulsen edited with Connie Clark.

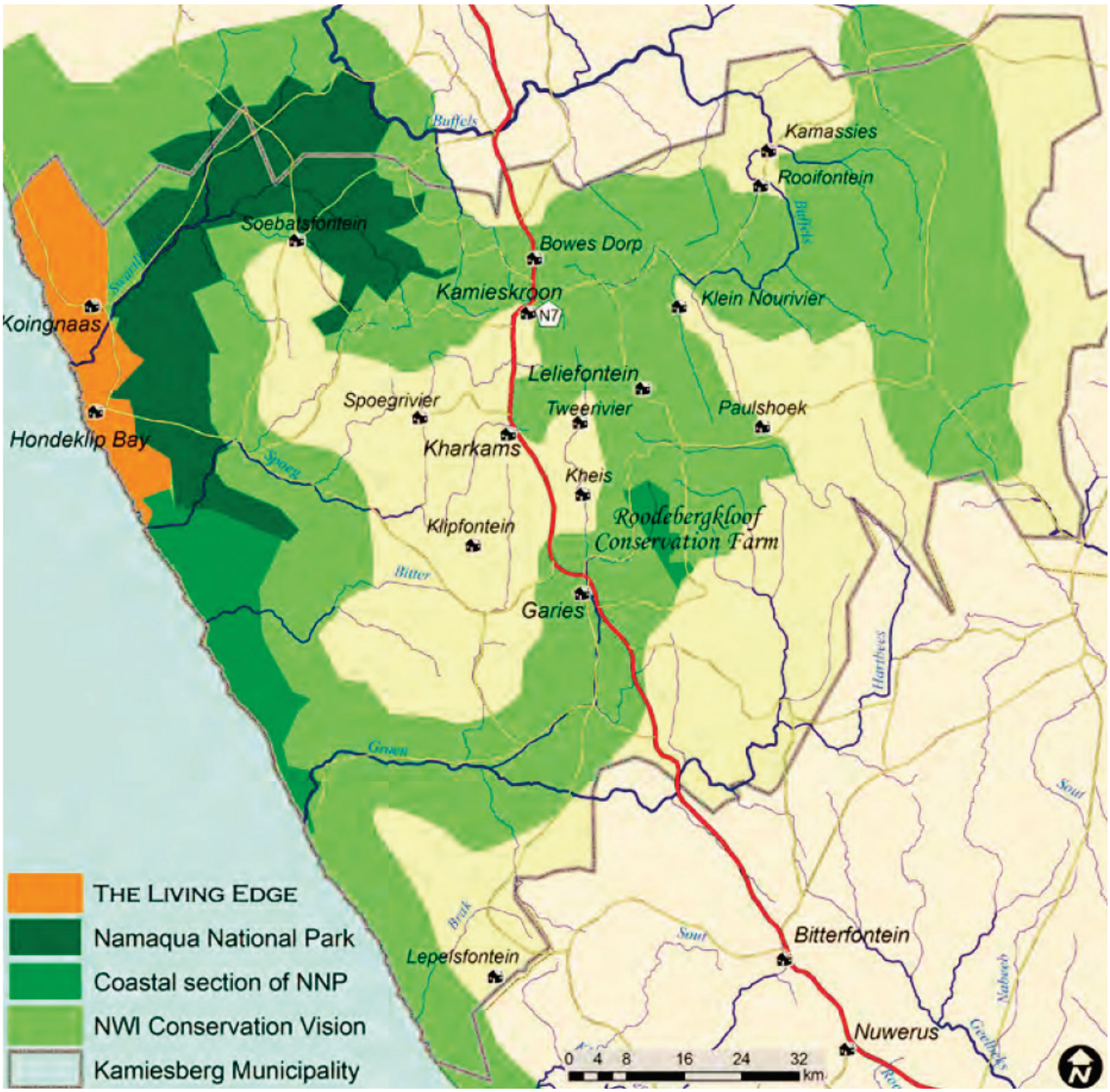


Figure 1. Map showing the Namaqualand Wilderness Initiative on the west coast of South Africa, involving CI, the South African National Parks, De Beers, and other stakeholders.

B.1: MINING AND BIODIVERSITY IN THE DEMOCRATIC REPUBLIC OF CONGO

The mineral wealth of the Democratic Republic of Congo (DRC) is estimated to be $24 trillion—50 percent more than the U.S. gross domestic product in 2011. Most mineral reserves are still untapped, but they have the potential to make DRC the richest country in the world. DRC has the world's largest reserves of cobalt and columnite-tantalite (coltan), the world's second-largest reserves of copper (equivalent to 10 percent of the world's reserves), and significant reserves of diamonds and gold. As a result of a decade of war, civil unrest, and instability from the mid-1990s to mid-2000s, most mining operations are artisanal. In the past decade, however, improvements in security and state control over mining areas have allowed formal actors to re-enter the sector. To that end, the DRC government has awarded increasing numbers of mineral exploration and exploitation concessions in recent years. In January 2011, the Ministry of Mines listed 7,732 mineral permits covering 112,731,739 hectares, representing 48 percent of DRC's territory. With the area under mining permits increasing rapidly, competition between mining and conservation interests will only intensify in coming years.

This increased mining could imperil DRC's biodiversity. A century of intensive mining throughout much of the country already has produced negative impacts on its environment, most directly through the degradation and destruction of some of the world's most diverse and irreplaceable natural habitat. Mining also has provoked biodiversity loss through associated over-hunting and poaching. Extraction methods similarly degrade ecosystem services, including pollution of water bodies from suspended silt and ground water from heavy metals. Furthermore, long-term mining sites often are not rehabilitated, as in the case of so-called moonscapes in Katanga Province's copper zone.

To counter these looming threats, ABCG undertook Task B.1 to develop and implement a model for engaging mining companies and DRC's government on biodiversity conservation and stewardship in the country.

Collaborators

CI, WCS, WRI, and WWF

Dates

FY 2012–FY 2013

Summary of Outputs

- "ABCG Extractive Industry Strategic Planning Workshop." Workshop to develop integrated approach for collaboratively addressing extractive industry and biodiversity issues in DRC. Washington, DC. October 11–12, 2011.
- *Report on Impacts from Mining on Biodiversity Conservation in the Democratic Republic of Congo.* Provides overview of mining in DRC, with emphasis on its threats to biodiversity and possible approaches to increase its environmental sustainability. ABCG. 2011.
- *L'Analyse de l'expérience de la réforme du secteur forestier pour en tirer des leçons nécessaires et contribuer au processus de la réforme du secteur minier en RDC (Analysis of the Forest Sector Reform Experience and Lessons Learned to Contribute to the DRC Mining Sector Reform Process)*. Report

analyzing reforms of the forestry sector which can apply to mining sector reform. Luc Durrieu de Madron, Christian Vallier, Françoise Van de Ven, and Didier Mopiti. 2012.

- *Managing Land for Mining and Conservation in the Democratic Republic of Congo*. Policy brief summarizing the role of mining in DRC, the private interests involved, and the statutory and regulatory framework for the activity. Anne-Gaelle Javelle and Peter Veit. 2012.
- *When Elephants Fight, it is the Grass that Suffers: Artisanal Mining & Conservation in the DRC*. Policy brief laying out priority issues for conservation groups wishing to address artisanal mining in DRC. Micha Hollestelle, Asher Smith, and Kirsten Hund. 2012.
- *Artisanal and Small-Scale Mining in Protected Areas and Critical Ecosystems Programme (ASM-PACE): A Global Solutions Study*. Report summarizing the scope and scale of artisanal and small-scale mining in protected areas and critical ecosystems, describing its effects, documenting attempted solutions, and offering recommendations. Cristina Villegas, Ruby Weinberg, Estelle Levin, and Kirsten Hund. 2012.
- "Mitigating the Impacts from Mining in the DRC: Workshop on Strategy and Practice." Workshop to identify and promote the adoption of best practices in DRC's mining sector in order to mitigate negative impacts on biodiversity and ecosystem service values. Attendees from DRC included government officials, mining company representatives, and civil society groups focused on mining and environmental issues. Kinshasa, DRC. June 13–14, 2013.
- *Financial Disclosure and the Canadian Mineral Sector: Lagging Behind or Catching Up?* Policy brief on Canada's mineral industry and its lack of financial disclosure transparency. Peter Veit and Catherine Easton. 2013.

Major Impacts

As a result of WWF's 2012 paper *Analysis of the Forest Sector Reform Experience and Lessons Learned to Contribute to the DRC Mining Sector Reform Process*, members of DRC's environmental civil society submitted proposed amendments, based on recommendations from the paper, to the Ministry of Mines as part of the country's mining code reform.

In 2012, WRI and WWF updated and added new layers to maps, developed in prior activities, of overlaps of mining concessions and areas of high biodiversity. They made these maps available to a broader audience through the Moabi website. CI, working with its partner Birdlife International, shared Important Bird Area geospatial data for DRC on the Moabi website as well.

WWF's work on mining in Africa, including its Task B.1 work, helped lay the groundwork for collaborations with the World Bank. On May 28, 2013, the two institutions signed a memorandum of understanding to intensify collaboration in Africa's extractive industries sector, and jointly support more sustainable extractive industry practices which provide benefits to local communities and protect the environment. The two institutions also jointly produced the 2013 documentary film *Heart of Iron: Mining in the Congo Basin Rainforest*. The film explores the complexities of mining for steel in the Congo Basin's Tri-national Dja-Odzala-Minkébé region (also known as Tridom), which holds one of the largest untapped iron reserves on Earth, and which is also home to Baka and Bakola pygmy and Bantu tribes as well as gorillas, chimpanzees, and elephants.

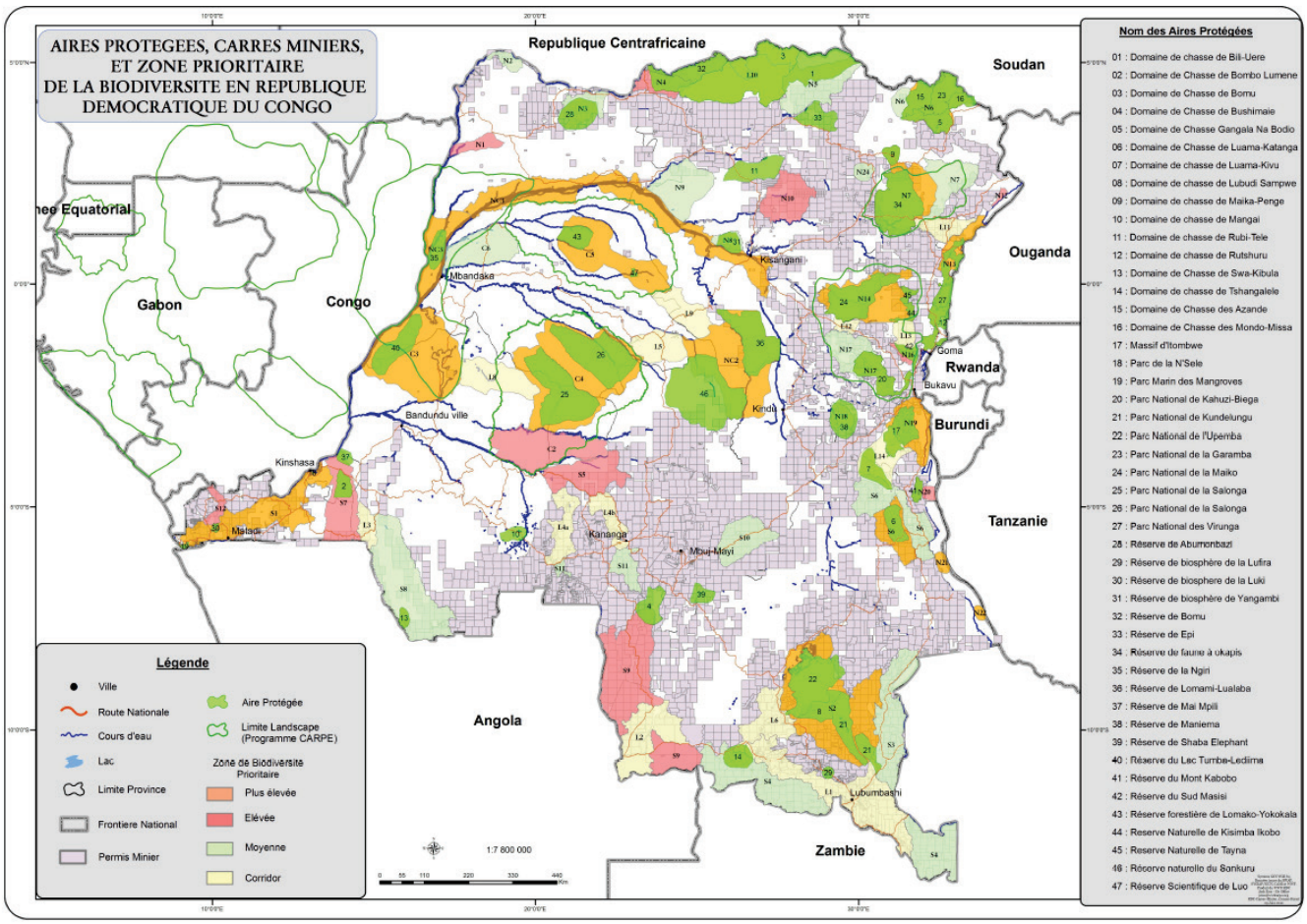


Figure 2. Protected areas, mining permits, and biodiversity priority zones in DRC. Courtesy of WWF Central Africa Regional Programme Office.

Recommendations for Future Action

The 2013 workshop "Mitigating the Impacts from Mining in the DRC: Workshop on Strategy and Practice," held in Kinshasa, concluded with a suite of recommendations to DRC's government on ways to conduct mining in an environmentally and socially sustainable manner. Future action on mining and biodiversity in DRC could focus on the government's implementation of those recommendations.

B.2: HIGH CONSERVATION VALUE FOREST ASSESSMENT AND RISK ASSESSMENT FOR DEVELOPMENT

Collaborators

CI, WCS and WWF

Dates

FY 2012–FY 2015

As extractive industries put increasing pressure on Africa's forests, there is a growing need for the continent's countries to classify land according to its conservation value, and based on this system to target development to areas of low conservation value and spare areas of highest conservation value. To categorize lands thus, many companies, governments, and NGOs are turning to the High Conservation Value (HCV) standard for good environmental practice originally developed by the Forest Stewardship Council. HCV criteria are generic, however, and must be adapted to a country through metrics appropriate to its unique ecology, ideally developed in a scientifically robust, repeatable, and transparent manner. In addition, to produce quality assessments, HCV criteria must be based on quality ecological data. This poses challenges for many places in Africa, where experience in using the HCV approach is limited and where gaps in data on local flora and fauna are common.

With these issues in mind, the Task B.2 team worked in Gabon to gather baseline ecological data to inform possible oil palm and rubber plantation siting, and to test the feasibility of establishing HCV-based criteria for a national Roundtable on Sustainable Palm Oil (RSPO) standard.

Summary of Outputs

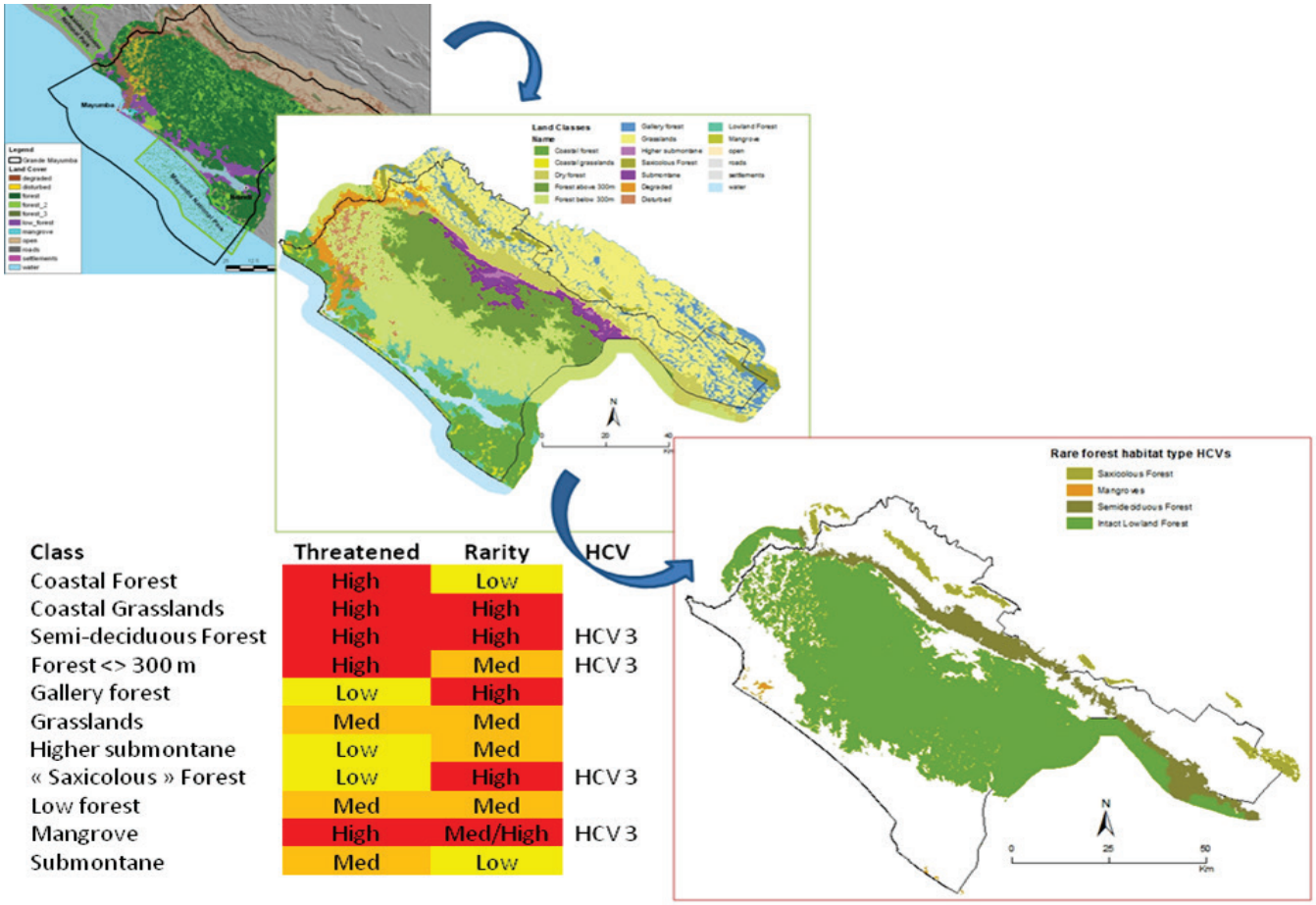
- *A Global Review of National Guidance for High Conservation Value*. Report analyzing 19 countries' HCV guidelines to identify best practices and assess cross-nation consistency, and recommending ways to better standardize national guidelines. Rachel Neugarten and Conrad Savy. 2012.
- *Defining HCV Thresholds in Gabon: Year #1 Report—An Interim Report on Activities & Initial Results WCS, MBG and WWF*. Report of a project to create a model approach for setting national-level guidelines for select HCV attributes, with a focus on Gabon. Tim Rayden. 2012.
- *Defining HCV Thresholds in Gabon: Year #2 Report—An Interim Report on Activities and Initial Results*. Report on data collection and mapping of Gabon's forest types, endemic plants, and freshwater biodiversity, and modeling elephant and great ape populations. WCS Gabon Program. 2013.
- "*Testing approaches to define High Conservation Value thresholds in Gabon—Final Report* (2015)." Report which details, among other activities, ABCG members' spatial integration of Gabon's conservation priorities with ecological features to delineate HCV areas within the country. Includes maps of elephant, chimpanzee, and gorilla distribution, maps of threatened mammals, birds, and amphibians, and IUCN Red List assessment to identify HCV endemic flora species. Tim Rayden, Olivia Scholtz, Dan Segan, Bas Verhage, and Tariq Stévart. 2015.

Major Impacts

Through Task B.2, Gabon now has a database classifying its forest resources and biodiversity hotspots with categories such as endemic faunal species, great ape abundance, and freshwater fish diversity. These national-scale datasets can serve in setting land-use priorities in advance of further extractive activity. This includes supporting keystone species surveys such as the one performed on forest elephant distribution and abundance, which resulted in the seminal article, *Devastating Decline of Forest Elephants in Central Africa*, by Fiona Maisels, et al. (2013).

Intermediate results from the project to analyze Gabon's biodiversity for HCV criteria development were presented at the Society for Conservation Biology's International Congress for Conservation Biology (ICCB) meeting in Baltimore, MD, in July 2013, at the IUCN Great Apes meeting in Republic of Congo in May 2013, and at a series of small expert meetings in Gabon.

WWF also engaged palm oil companies and Gabon's government in developing national HCV criteria for the RSPO. The process included learning workshops that incorporated prior ABCG-supported work. More broadly, Task B.2 advanced the fields of HCV and biodiversity offsets and the tools they offer for corporate social responsibility.



Class	Threatened	Rarity	HCV
Coastal Forest	High	Low	
Coastal Grasslands	High	High	
Semi-deciduous Forest	High	High	HCV 3
Forest <> 300 m	High	Med	HCV 3
Gallery forest	Low	High	
Grasslands	Med	Med	
Higher submontane	Low	Med	
« Saxicolous » Forest	Low	High	HCV 3
Low forest	Med	Med	
Mangrove	High	Med/High	HCV 3
Submontane	Med	Low	

Figure 3. The process of defining HCV-3—rare, threatened, or endangered ecosystems, habitats or refugia.

C: ANALYZING BIODIVERSITY CONSERVATION AND GOVERNANCE TO PREVENT CONFLICT AND CRISIS

Collaborators

AWF, JGI, TNC, and WRI

Dates

FY 2008–FY 2014

Countries, provinces, and other jurisdictions often create protected areas (PAs) for locales harboring significant diversity of flora and fauna, according them safeguarded legal status and giving them priority in the area's management. Much biodiversity occurs outside park borders, however, and does not receive this special protection. Other species move among protected and non-protected areas, becoming vulnerable to threats from local communities, who may have rights to protect their property from perceived or real threats posed by wildlife. To handle the challenge of conserving biodiversity outside protected areas, conservationists have pursued community-based wildlife management and other locally driven approaches. In Africa, such efforts often focus on land occupied, used, or claimed by rural people and held by undocumented customary rights and norms. At the same time, protected areas in Africa have increased in recent years from 14.4% of the continent's surface area in 2003 to 17.1% in 2014 (Chape, Blyth, Fish, Fox, & Spalding, 2003; Deguignet et al., 2014). Related legal and social issues such as the methods by which national parks are established and the use of free, prior, and informed consent by local communities have come under increased scrutiny as well.

The proximity and overlap of protected areas, wildlife, and people sets the stage for conflict, particularly in nations with poor or failed governance. To address the problem, Task C began assessing land and natural resource-use management tools on land outside protected areas, especially community-managed common property, to achieve biodiversity conservation goals. ABCG's initial focus was on maintaining the integrity of natural resources before, during, and after crisis situations, particularly in the redevelopment and transformative stages. Originally titled "Biodiversity Conservation in States Vulnerable To/Recovering from Crisis," Task C was renamed in 2012 and in some reporting materials is referred to as "Land Tenure, Rights and Governance."

Summary of Outputs

- *Biodiversity Conservation and Crisis: Key Issues for Consideration*. Manual to familiarize field practitioners on scenarios and unintended consequences of conflict on biodiversity and its conservation. Jon Unruh, et al. 2008.
- *Degazettment and Denotification of Protected Wildlife Areas in Kenya and Tanzania*. A presentation on developments which have influenced degazettement and denotification in Kenya and their impacts. Akinyi Jane Dwasi. 2010.
- *Protected Area Downgrading, Downsizing, & Degazettement in Africa: local pressures, global demands, and everything in-between*. A presentation explaining trends and causes of PA downgrading, downsizing, & degazettement (PADDD) in Africa. Sharon Pailler, et al. 2010.
- *Securing Forested Land Through Carbon Offset Projects: Pilot Projects from the African Wildlife Foundation in East Africa*. Report analyzing carbon easements as a conservation tool in Kenya. Kathleen Fitzgerald. 2010.

- *Land Tenure, Reform, and Conservation Tools in South Africa and their Potential Application in Kenya*. Report. Kathleen Fitzgerald. 2010.
- *The Impact of the New Constitution of Kenya and the National Land Policy on Community Conservation Objectives in Kenya: A Case Study of the Northern Rangelands Trust*. Report assessing provisions of the Kenya Constitution, adopted 2010, and the Kenya National Land Policy, adopted 2009, for opportunities for the growth of community conservancies in the country. Collins Odote. 2010.
- *Conservation in the Central African Republic: Threats and Successes*. Presentation providing overview and perspectives of WWF's Central African Republic country program, including key threats in a country facing governance challenges. Jean-Bernard Yarissem. 2011.
- *Wildlife Conservation in Zimbabwe: A Review of Relevant Statutes and an Assessment of Protected Areas, Conservancies, and Implications of the Indigenisation Policy*. Report reviewing Zimbabwe's land tenure legislation and policies, and proposing models for land management community partnerships. AWF. 2011.
- *The Impact of the Recent Constitution and Land Policy Reforms on Community Conservation Initiatives in Kenya*. Presentation analyzing communal conservancies in Kenya in light of the country's new constitution and land policy. Collins Odote. 2011.
- *Private Land Use Restrictions in East Africa*. Presentation examining the law and practice of restrictions on private land use to assess their usefulness toward biodiversity conservation goals on non-PA, privately held lands in Tanzania. Peter Veit, et al. 2011.
- *Government Restrictions on the Use of Private Land in Kenya*. Report. A study examining the law and practice of restrictions on private land use in Kenya to assess their usefulness toward biodiversity conservation goals. Jane Dwasi. 2013.
- *Summary Report on: A Proposed Business Model for a Conservation Based Property in a Conservancy in Zimbabwe*. Report proposing AWF's model for property-level integration of communities to form a conservancy in Zimbabwe. Kathleen Fitzgerald. 2013.

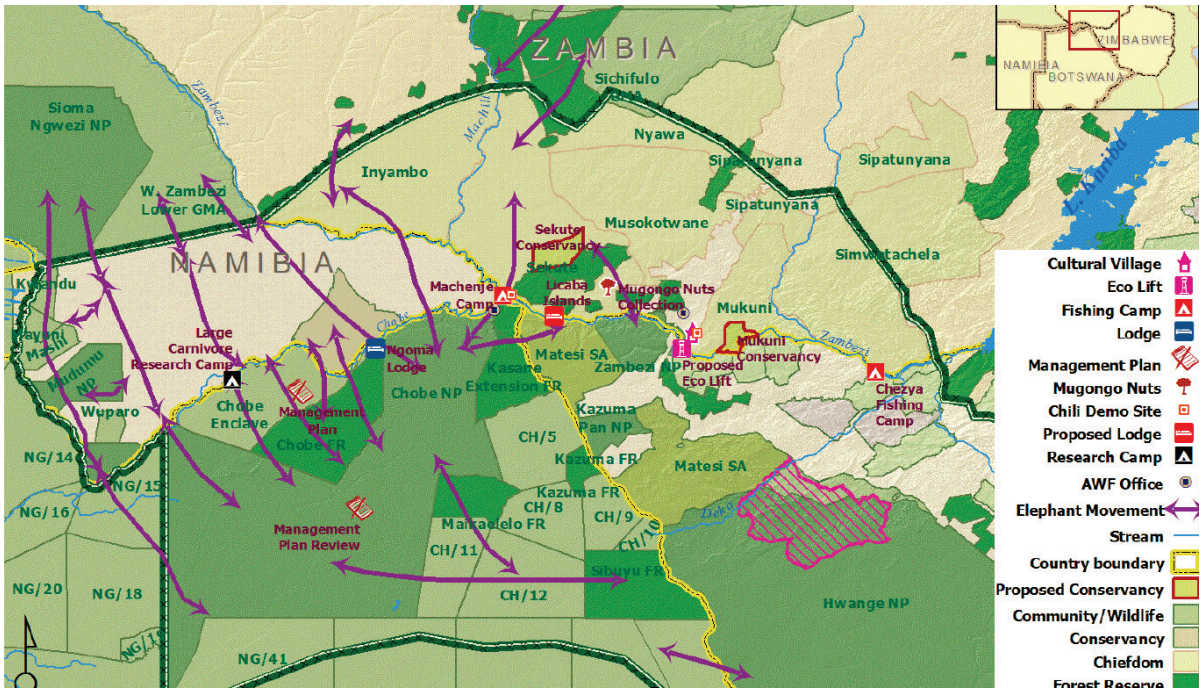


Figure 4. Kazungula Transboundary Landscape.

Major Impacts

Through Task C, ABCG contributed to the state of knowledge on protected-area degazettement, particularly in Kenya, Tanzania, and Uganda. A meeting on Protected Area Degazettement, Downlisting, and Downsizing (PADDD), held on November 11, 2010, revealed conflicts of land resources and land-use allocation. In Uganda, WRI partnered with Advocates Coalition for Development and Environment (ACODE), a local NGO, to produce a series of reports including *Due diligence on lands at risk of or subject to land acquisitions in Uganda*. WRI also contributed to WWF's PADDD*tracker.org program.

In 2010, TNC reviewed the potential impact of Kenya's new constitution enacted and adopted in the same year, and land tenure policy to the communal conservancy movement in Kenya. The assessment found that both the Land Policy and the Constitution emphasize the need for greater protection of communal land rights. The Northern Rangelands Trust, a Kenyan conservation association, used TNC's findings to advocate for favorable community land legislation.

AWF provided technical expertise toward conservancy, sustainable tourism, and wildlife sector development in Zimbabwe. This included the *Summary Report on: A Proposed Business Model for a Conservation Based Property in a Conservancy in Zimbabwe*, which AWF presented to the country's govvernment, and research on restructuring conservancies which enabled a community to become the first leaseholder in a private concession. Based on their experience, AWF staff also gave two presentations at the 2014 Annual World Bank Conference on Land and Poverty: *Status of Wildlife and Conservation Areas in Zimbabwe and Recommendations for Recovery* and *Using Innovative Land Conservation Tools in Africa to Protect Land, Enhance Resource Management and Improve Community Livelihoods*.

JGI, TNC, and their longtime partner Frankfurt Zoological Society worked on land-use planning and conservation in Tanzania. In collaboration with district-level government members, the NGOs helped local citizens establish village land-use planning committees and conduct participatory village land use planning processes in western Tanzania—namely in the Greater Mahale Ecosystem, Greater Gombe Ecosystem, and Masito Ugalla Ecosystem (collectively known as the Greater Katavi–Mahale–Gombe Ecosystems or GKMGE). The organizations also are supporting integrated management planning for GKMGE by facilitating the creation of the GKMGE Steering Committee, which is expected to greatly improve coordination and implementation of the integrated management plan across the landscape, and the GKMGE Steering Committee Terms of Reference. To broaden the scope of its conservation and development activities, the GKMGE Steering Committee recruited district medical officers onto the committee, with the goal of integrating population, health, and environment (PHE) issues into its work.

Figure 5. Community engagement in a participatory forest management workshop.

Recommendations for Future Action

In some countries, the laws provide governments with unchecked discretion to degazette parks and allow for large-scale economic activities in PAs, such as plantation farming, mining, and oil extraction. Therefore a recommendation is for ABCG to continue educating and working with governments on the need for clear procedures for degazetting PAs and allowing PAs and natural resources to be used for social and economic purposes.

Furthermore, it is recommended that ABCG continue to engage governments on implementing viable land management models similar to the commercial model developed for the Government of Zimbabwe for its Parks Estate. The need for partnerships among local communities and the private and

public sectors to achieve sustainable land management should be an ongoing message in order to conserve biodiversity in the face of growing pressure for land and other threats.

D: SUPPORTING COUNTRY 118/119 OPERATIONAL PLANS BIODIVERSITY AND TROPICAL FORESTRY ASSESSMENTS

Collaborators	*Dates*
ABCG Coordinator, Chemonics International Inc., and USFS/IP	*FY 2008–FY 2011*

The Foreign Assistance Act Section 118 "Tropical Forests" and Section 119 "Endangered Species" require USAID in its development strategy statements or other plans for a country to analyze 1) the actions necessary in that country to conserve biological diversity and tropical forests, and 2) the extent to which current or proposed USAID actions meet those needs. Conducted approximately every five years, the strategic plan assessments for Sections 118 and 119 thus require the gathering and analysis of technical information on biological diversity and tropical forests from the country in question.

With its network of organizations, staff, and on-the-ground partners throughout Africa, ABCG members can supply the technical information needed for 118/119 Assessments of African countries. Through Task D, ABCG provided this information.

Summary of Outputs

During the implementation of BATS, the U.S. Forest Service, Chemonics International, and IRG/Engility conducted 118/119 Assessments for USAID. When seeking expertise on wildlife and forest resources in African countries for these assessments, the organizations often contacted the ABCG Secretariat. Working with ABCG member NGOs and their in-country partners, the Secretariat identified experts or programmatic, intellectual, or other resources on the country in question. Examples of the support ABCG provided in this regard are:

- Documentation
- Key informant interviews
- Suggestions for further contacts or resources of possible use for the assessments.

Major Impacts

ABCG's Task D assured the quality of USAID's 118/119 Assessments of African countries by helping capture the best available scientific knowledge on biodiversity and forestry and relevant conservation practices, strengthening USAID's services with regard to natural resources.

E: INTEGRATING APPROACHES TO FOOD SECURITY AND BIODIVERSITY

Collaborators

AWF, CI, and WCS

Dates

FY 2011–FY 2013

Poor rural people often have no choice but to improve their food security through extensive use of land—a common approach that reflects farming households' desire to maximize use of limited resources to satisfy current needs and plan for longer-term aspirations, and one that also reflects larger-scale landscape dynamics. In many situations such extensive land use encroaches into areas ill-suited for farming but which contain wildlife habitat and/or provide ecosystem services upon which people and wildlife depend. Over time, this inappropriate land use often negatively impacts wildlife and its habitat and actually increases the food insecurity of vulnerable people. In these situations, the future of both poor rural people and wildlife may be tied to land-use options. Understanding connections and trade-offs between food security and conservation is therefore essential for sound planning and management decisions.

Before the advent of ABCG, its members already had been working on food security as it relates to agriculture and conservation in Africa. Task E sought to collate information on these experiences in AWF's Zambezi Heartland and WCS's Ituri Forest landscape, and in CI's work on spatial analysis and community-based approaches. Task E also aimed to synthesize, for the first time, African experiences in integrating climate change adaptation and mitigation into agricultural landscapes, and to shed light on how agricultural landscapes can be managed for food security, biodiversity conservation, and climate change mitigation and adaptation. Finally, with the information it gained, Task E looked to inform policies of African governments and strategies of donor and development agencies.

Summary of Outputs

- *Finding Optimal Trade-offs Between Food Security and Conservation in Africa: A Review of Tools and Presentation of Case Studies from Zambezi and Ituri Landscapes*. Report discussing the findings of reciprocal visits that AWF and WCS teams made to field programs engaging in improved farming, and CI's review of spatial and community-based approaches' usefulness for food security goals. Jimmiel Mandima, Nasson Tembo, Bemmy Granados, Terry Hills, Michael Painter, and Robert Mwinyihali. 2011.
- *Food Security Strategies in the Kazungula and Zambezi Heartlands, and their Link with Conservation Impact and Climate Change*. White paper on alternative food security strategies in two transboundary landscapes poorly suited for agriculture and highly vulnerable to climate change. Joss Swennenhuis. 2012.
- *Integrated Landscape Initiatives: An Emerging Paradigm for African Agriculture, Development, and Conservation*. White paper examining 73 integrated landscape initiatives across sub-Saharan Africa to provide the first region-wide portrait of the contexts, motivations, design, participation, and outcomes of such initiatives. Jeffrey Milder, Abigail Hart, Phil Dobie, Joshua Minai, and Christi Zaleski. 2012.

- "Integrating Climate Change Adaptation and Mitigation in Agricultural Landscapes." Workshop to review potential approaches for climate change adaptation and mitigation in agricultural landscapes, and to begin drafting scientific paper identifying policy options to help promote these approaches. Arlington, VA. July 31-August 2, 2012.
- *The Impacts of Improved Goat Husbandry and Aquaculture on Local Food Security and Conservation in Siavonga District, Zambia*. White paper examining conditions for successful operation of community-based goat production and aquaculture in Siavonga District, Zambia. Emanuel Chibesakunda. 2013.
- *Potential contributions to food security from scaling up agroforestry and improved soil and water management practices in Burkina Faso*. White paper discussing benefits experienced by farmers using agroforestry and other improved land management practices in Burkina Faso's Central Plateau, and presenting a methodology to assess potential suitability of land for them. Florence Landsberg, Chris Reij, Robert Winterbottom, Mathieu Ouédraogo, Adama Belemviré. 2014.

Figure 6. School-based vegetable gardening in Kazungula, Zambia. Photo courtesy of AWF.

Major Impacts

ABCG and the Task E partners created materials to communicate the results of their food security research and analysis. ABCG produced a summary handout of *Finding Optimal Trade-offs Between Food Security and Conservation in Africa: A Review of Tools and Presentation of Case Studies from Zambezi and Ituri Landscapes* (above) in 2011. The team members organized a brown bag talk on the report on September

15, 2011, in Arlington, VA. AWF also wrote a policy brief on its Zambezi Heartland work and related research it performed in DRC's Maringa-Lopori-Wamba Heartland.

To further expand Task E's impact, the task team informed an audience of influencers about the findings. After completion of the study, *Food Security Strategies in the Kazungula and Zambezi Heartlands, and their Link with Conservation Impact and Climate Change*, AWF held a workshop in Lusaka, Zambia, in FY 2012 to present the assessment to members of national and local government, and international, national, and local NGOs. AWF also held a workshop in Kinshasa, DRC, in FY 2012 to share findings from the food security assessment it had conducted of the Maringa-Lopori-Wamba Heartland. EcoAgriculture Partners and CI wrote a discussion paper on *Integrated Landscape Initiatives: An Emerging Paradigm for African Agriculture, Development, and Conservation* for the "Summit for Sustainability in Africa," May 24-25, 2012, in Gaborone, Botswana, which assembled heads of state or ministers from 10 African countries as well as leaders from the global private sector, and other stakeholders.

An ancillary goal of Task E was to contribute to USAID's Feed the Future (FTF) initiative, in which U.S. government agencies engage with partner countries to develop their agriculture sectors and lower hunger. ABCG worked with government staff and NGO partners to develop an FTF seminar series called *Integrating Climate Change and Natural Resource Management into Feed the Future*. WCS's Michael Painter spoke about Task E work as a presenter in the series's first seminar, on March 30, 2011.

Task E's work also was a component of the Landscapes for People, Food, and Nature (LPFN) Initiative, a three-year collaborative initiative among NGOs and research institutes to foster cross-sectoral dialogue, learning, and action to support integrated agricultural landscape approaches on a wide scale. Preliminary findings of Task E's integrated landscape initiatives paper (above) were discussed at the LPFN Forum in Nairobi, Kenya, in March 2012.

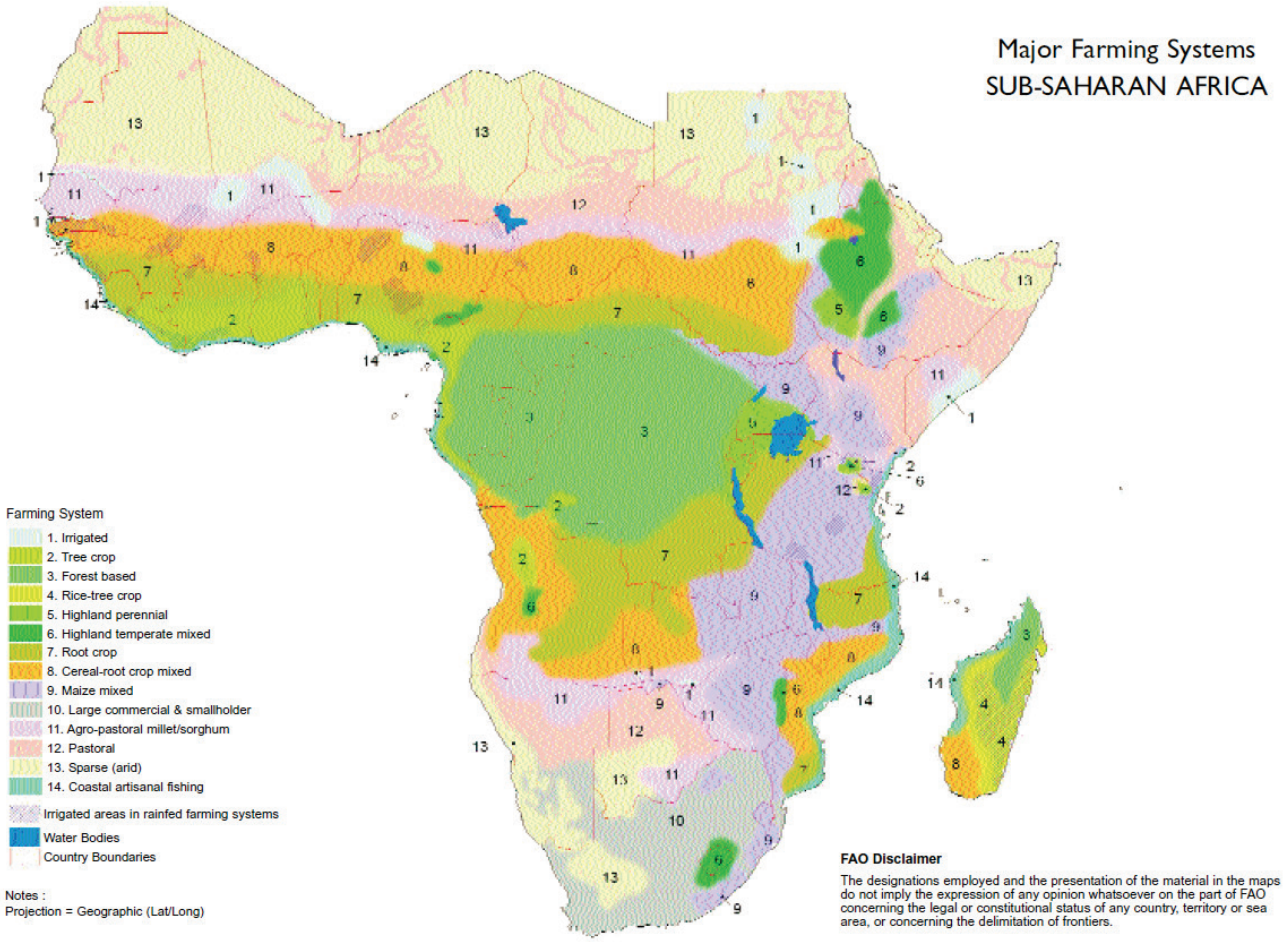


Figure 7. Farming Systems in Sub-Saharan Africa (Dixon, Gulliver, Gibbon, & Kassam, 2001).

F: ADDRESSING GLOBAL CLIMATE CHANGE THROUGH ADAPTATION AND ACTIONS IN WOODLANDS, GRASSLANDS AND OTHER ECOSYSTEMS:

Climate change, and its impacts on ecosystems and people, will likely be the biggest threat to biodiversity conservation in Africa in the 21st century. Over the course of the next century human-induced climate change will lead not only to higher temperatures, but also to altered rainfall regimes and more frequent extreme weather events such as droughts, floods, and heatwaves. Africa is particularly vulnerable to the effects of climate change, largely due to people's high reliance on natural resources as an economic mainstay and because communities have relatively low development and adaptive capacity. This will add to the pressure ecosystems already are experiencing as people turn to natural resources to offset losses caused by climatic influences (IPCC, 2014).

In the last two decades the scientific community has responded to this challenge with an increasing emphasis on understanding what current and future climate change likely will mean for biodiversity and for the environment in general. Global climate change is an extensive phenomenon, affecting virtually all sectors of societies and livelihoods. As such, ABCG approached the Global Climate Change Task with a number of sub-tasks: Global Climate Change, REDD+ Readiness, Woodlands and Tradeoffs, Clean Energy Technology, and Grasslands and Soil Carbon.

F.1: LEARNING BY DOING: BUILDING CLIMATE CHANGE ADAPTATION CAPACITY IN AFRICA

Collaborators

CI, TNC, WCS, and WWF

Dates

FY 2010–FY 2015

Biodiversity conservation strategies aimed at addressing the effects of climate change often focus on climate change's direct impacts on plants and animals, such as species range shift in response to higher temperatures, but these interactions are only one part of the story. Like other organisms, humans respond to climate change to reduce their vulnerability and take advantage of new opportunities that climate change creates. These modifications in human behavior can affect biodiversity too, and constitute some of climate change's indirect impacts on biodiversity. For conservation interventions to be effective, they must factor in climate-driven human behaviors and their effects. But, in contrast to government responses to climate change, which are demonstrated by policies and platforms, individuals' climate change decisions and how they impact biodiversity are not well documented or understood.

To bridge this knowledge gap, the members of Task F.1 collaborated to learn about African individuals' and communities' past and present responses to climate variability as a key to planning future conservation efforts.

Summary of Outputs

- *A Review of Climate Change Adaptation Initiatives within the Africa Biodiversity Collaborative Group Members*. Report presenting findings, gathered from a survey and a workshop, about ABCG members' climate change adaptation approaches and tools used in project work in Africa. ABCG. 2011.
- "A Holistic Approach to Climate Change Adaptation in Africa: A Dialogue for Conservation and Development Organizations." Workshop of members of the development, conservation, and donor communities to share knowledge, tools, and ideas for collaboration on climate change adaptation. Washington, DC. July 24-25, 2012.
- *A Review of Monitoring and Evaluation Approaches for Ecosystem-Based Adaptation*. Paper exploring how various organizations and practitioners approach the design and use of monitoring and evaluation tools to record results and assess ecosystem-based adaptation projects and programs. Margaret Spearman and Radhika Dave. 2012.
- *A Systematic Approach to Incorporate the Human Response into Climate Change Conservation Planning*. White paper illustrating the importance of incorporating the indirect impacts of climate change into climate change vulnerability assessments and conservation planning, using three case studies from southern Africa. Daniel Segan, James Watson, David Hole, Camila Donatti, Chris Zganjar, Shaun Martin, Kamweti Mutu, and Natalie Bailey. 2013.
- *ABCG Project Documenting Human Responses to Changes in Weather and Climate in Africa*. Report on how rural people in natural resource-based livelihoods respond to the effects of climate change, and how the responses impact biodiversity, conducted in Gabon, Madagascar, Tanzania, and Uganda. ABCG. 2015.

Figure 8. Teddy, who grows coffee and banana in Kyarumba town, Uganda, has coped with climate change by diversifying into agroforestry and chicken rearing.

Figure 9. Focus group in the farming community of Marofijery, southwest Madagascar.

Major Impacts

By the start of Task F.1, climate change adaptation had become a central component of ABCG members' African conservation activities, but members had communicated little with one another to share approaches, results, and lessons learned in this relatively new field of practice. To remedy this and promote inter-ABCG learning, ABCG reviewed members' principal climate change adaptation activities in Africa through a survey, presented at a workshop held in Washington, DC, in July 2011. Information gathered from the process yielded *A Review of Climate Change Adaptation Initiatives Within the Africa Biodiversity Collaborative Group Members*, launched at USAID headquarters in Washington, DC, in September 2011. The report spurred a follow-up workshop, entitled *A Holistic Approach to Climate Change Adaptation in Africa*, in July 2012 in Washington, DC, which assembled more than 40 members of the development, donor, and conservation communities to share climate change adaptation knowledge and tools, discuss emerging issues, and formulate recommendations for effective future work.

Activities in subsequent years began to fill knowledge gaps identified in these priority-setting steps. *A Review of Monitoring and Evaluation Approaches for Ecosystem-Based Adaptation* explores M&E approaches for ecosystem-based adaptation strategies. *A Systematic Approach to Incorporate the Human Response into Climate Change Conservation Planning* illustrates the importance of incorporating the human-behavior-driven indirect impacts of climate change into climate change vulnerability assessments and conservation planning. The group adapted the white paper into an article, *Considering the impact of climate change on human communities significantly alters the outcome of species and site-based vulnerability assessments*, published in 2015 in the journal *Diversity and Distributions*.

Figure 10. The original bridge in the background, and a bridge constructed following the floods in the foreground, in Kasese District, Uganda. Residents cope with extreme events by increasing riparian buffers and resettling to higher ground.

The Intergovernmental Panel on Climate Change (IPCC) *WG2 AR5* 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," (IPCC, 2014, p. 26). To this end, in 2014, the Task F.1 team conducted research interviewing rural people engaged in natural resources-based livelihoods in Gabon, Madagascar, Tanzania, and Uganda, to investigate human responses to climate change. The analysis is presented in *ABCG Project Documenting Human Responses to Changes in Weather and Climate in Africa*. The team members also wrote up the qualitative research protocol they employed for the study.

The Climate Change Adaptation task team has made an important contribution in exploring linkages between people and biodiversity as both realms adapt to the changing climate. The paper *Considering the impact of climate change on human communities significantly alters the outcome of species and site-based vulnerability assessments* (Segan et al., 2015) discussed the importance of examining how people may be affected by climate change and the impacts of their responses on biodiversity. The recently concluded pilot study indicated that, left to their own devices to cope with extreme events and increased climate variability, people are having negative impacts on nature. The paper justifies the need for deeper research on the effects of human responses to climate change.

Figure 11. Thousands displaced by Uganda Flooding, May 2013.
Source: BBC News, http://www.bbc.com/news/world-africa-22469245

Recommendations for future action

ABCG recommends that the interviews with rural residents to investigate human responses to climate change and their biodiversity impacts be conducted in other sites and landscapes in Africa. With the research protocol available and ABCG's network of field offices and staff, the work is ready to be expanded to more sites and landscapes. This study model has the potential to provide an understanding of how people are responding to climate change and, in the process, impacting biodiversity, which is critical to informing future best practices for climate change adaptation in Africa and elsewhere.

F.2: REDD+ READINESS WORKSHOPS

Collaborators ***Dates***

TNC and WCS *FY 2010–FY 2011*

REDD (reducing emissions from deforestation and forest degradation) is a multi-lateral climate change mitigating structure aimed at reducing net greenhouse gas emissions through better forest management practices. REDD+ adds to this concept a conservation component which aims to remove CO_2 from the atmosphere through measures such as forest regeneration. In Africa, a primary target for REDD+ activities is the Congo Basin forest—the second largest moist tropical forest left on the planet, providing critical biodiversity habitat and ecological services of local, regional, and global importance.

The goal of this task was to facilitate development of REDD+ readiness in Central Africa by building the expertise of REDD technicians, and building a network of REDD technicians in the region.

Summary of Outputs

The output was a one-week training session for 12 technicians involved in developing REDD demonstration projects in Cameroon, DRC, Gabon, and Republic of Congo. The session took place in February 2011 at WCS's training center in Lopé National Park, Gabon.

Structured to build participants' understanding of the drivers of deforestation, the training aimed to equip participants with the following sets of knowledge:

- The potential value of REDD demonstration projects in developing REDD readiness strategies, as well as their limitations.
- Familiarity with demonstration projects underway in the region.
- Key concepts associated with implementing and evaluating a demonstration project.
- How existing methodologies may inform an eventual international REDD regime.
- The state of knowledge on key potential project types (reduced impact logging; reducing fuel wood consumption; controlling savanna fires; direct payments; and potentially agriculture and reforestation), and a balanced understanding of the options and potential pitfalls of each.
- The major lessons for REDD from previous experiences, notably the well-documented integrated development and conservation project examples.
- A network of specialist peers who can maintain contact, share experiences, and support one another going forward.

Major Impacts

The Task F.2 team sought to boost the REDD capacity of people already involved in the practice. Hailing from Cameroon, DRC, Gabon, and Republic of Congo, the training participants were

technicians in government institutions, local NGOs, and the private sector. Those working for governments did so not in policymaking capacities but rather in technical implementing roles. Attendees generally had degrees or equivalent diplomas from regional training institutions and possessed basic knowledge of REDD concepts and processes, but lacked familiarity with more complex REDD matters.

The task team arrived at this training approach through discussions with government and NGO partners in the region to identify the most effective purpose for the training as compared to concurrent initiatives. The conclusion was that while many other training initiatives addressed REDD strategic planning and the process of developing demonstration projects, the trainings lacked sufficient education on mechanisms to address the drivers of deforestation.

In this way, the activity figured in the broader framework of ABCG's goal to improve understanding of REDD+ in Central Africa and to enhance the ability of Central Africans to engage in global climate change governance.

F.3: UNDERSTANDING CARBON FLUX UNDER CONDITIONS OF CLIMATE CHANGE: WOODLANDS AND TRADE-OFFS

Collaborators

AWF, JGI, and WCS

Dates

FY 2012–FY 2015

Land is a natural resource necessary for the wellbeing of much biodiversity. Humans need land too, and some human land uses are not conducive to the survival of the land's native plants and animals; the resulting habitat loss is the principal cause of biodiversity decline worldwide. As the human population grows and becomes more industrialized, demand for land and its natural resources rises as well, creating pressure to convert land from natural areas or areas of non-intensive human use to intensive human uses such as agriculture or extractive industry. Africa is experiencing this pressure now, with many uses and their associated interest groups competing for the continent's shrinking pool of available land. It can be a losing scenario for many interests—for biodiversity as well as for the various people who wish a parcel of land to be used for many different purposes which cannot coexist with one another or with conservation—and one which can be ripe for conflict.

With conservation planning methods, however, it can be a winning scenario. Conservation planning tools assess possible land uses by evaluating the costs and benefits to various stakeholders of each use. Using spatial data for this information gathered from community members and other data sources, software-based conservation planning methods objectively determine land allocations which maximize conservation goals and economic gains. The tools optimally balance users' interests while minimizing the cost to stakeholders and the possibility for resultant conflict. Because stakeholders contribute the informational inputs to the tool, the process is inclusive and transparent, which can increase community acceptance of the plan and thus its long-term success.

Task F.3 explored the use of Marxan, a conservation planning software, in land-use decision-making in three woodlands-dominated landscapes in Africa where ABCG members already operated. The collaborators strove to incorporate the interests of multiple stakeholders into decisions which would support the objectives of climate change mitigation, climate change adaptation, and biodiversity conservation. They also looked for insight on how to build capacity for such analyses in African countries.

Summary of Outputs

WCS kicked off the task with planning activities in the Murchison Falls-Semliki landscape. Located in Uganda's Albertine Rift region, the area is under pressure for oil development, mining, logging, and agriculture. WCS also had been developing a REDD+ project in the landscape.

- *Tools to make scientifically sound decisions about trade-offs between different actions.* At this meeting, WCS representatives demonstrated the Marxan tool. Participants—from Uganda's civil society, government, private sector, and academic sector—selected land-use objectives to plan toward and discussed how to assess their trade-offs to various stakeholders, envisioning the resulting land-use scenarios. Kampala, Uganda. August 27–28, 2012.

- *Navigating Trade-offs in Landscape Scale Planning: Biodiversity, Oil, Timber, Carbon and Agriculture: A case study of the Murchison-Semliki Landscape*. Organizers reviewed the landscape's biodiversity values and pressures, reviewed the Marxan tool, presented the findings from the previous workshop, highlighting likely difficult trade-offs, and solicited feedback and recommendations for next steps. Kampala, Uganda. July 2, 2013.

JGI conducted its trade-off assessment in the Masito-Ugalla ecosystem in western Tanzania. This area is under pressure for large-scale conversion of land to agriculture use.

- *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 Greater Mahale Ecosystem, Tanzania*. This meeting presented Marxan and its decision-making use to area conservation managers, planners, and members of government and the development community. Participants analyzed a case study of the trade-offs among biodiversity conservation, carbon sequestration, and development uses of the Greater Mahale ecosystem landscape. Kigoma, Tanzania. May 23–24, 2013.

AWF worked in the Kilimanjaro landscape, which straddles the border of Kenya and Tanzania. The landscape is under pressure for land conversion to uses including agriculture, mining, plantation forestry, and human settlements related to these activities.

- *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*. AWF representatives presented Marxan and its decision-making use to attendees from government and academic institutions, private sector, NGOs, and donors. Participants analyzed trade-offs of various land-use scenarios. Nairobi, Kenya. September 18–19, 2013.

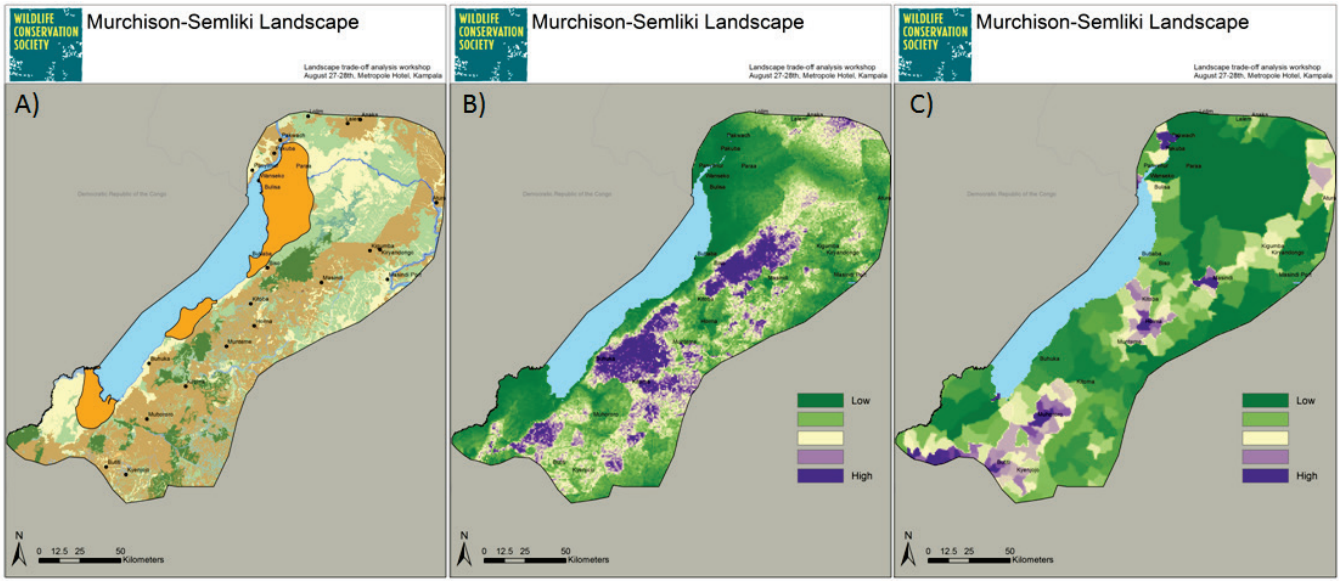


Figure 12. Spatial data for competing land uses in the Murchison Falls-Semliki landscape analysis: A) areas of potential value for petroleum development; B) concentration of high value timber species; and C) population density, as surrogate for agricultural demand.

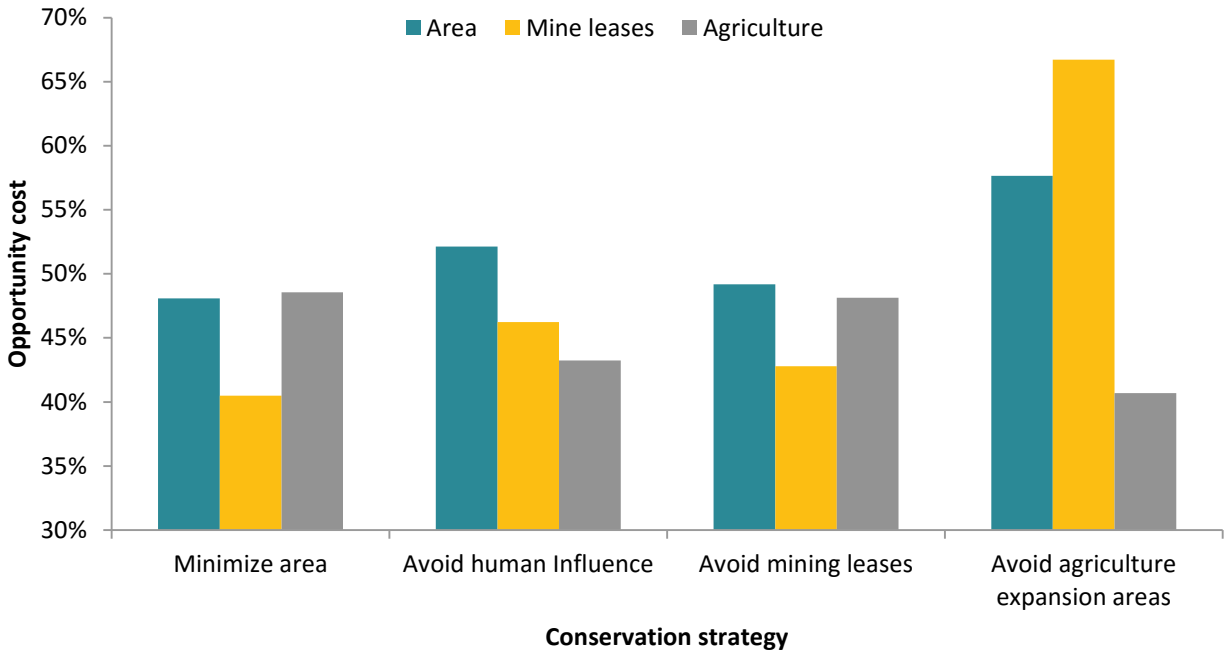


Figure 13. The distribution of opportunity cost of conservation under four different conservation strategies. Opportunity cost measure as the proportion of mapped area of interest for each use included in conservation zones.

Major Impacts

In *Avoiding Conflict and Balancing Trade-Offs: Biodiversity Conservation in the Context of Competing Land Uses*, WCS analyzed the results of its 2012 meeting in Kampala and laid out the model for the Marxan paradigm employed by the project (Figure 12).

Dan Segan, from WCS, made a presentation on that organization's tradeoff assessment work at the International Congress for Conservation Biology in Baltimore, Maryland, on July 24, 2013: *Optimizing trade-offs in woodland ecosystems: Carbon, Conservation and Communities*.

Figure 14. Marxan workshop group session in Kigoma, Tanzania.

Recommendations for Future Action

Based on the enthusiasm with which workshop participants in all three countries greeted the Marxan conservation planning, ABCG recommends that this activity be continued, taking into consideration recommendations made at the events. Attendees at JGI's workshop in western Tanzania (Figure 14) suggested the inclusion of additional data layers and alternative conservation priorities into the assessment, and that the analysis area be expanded to include the entire Mpanda District and two neighboring districts. Kenyan participants of AWF's workshop called for Marxan conservation planning in Kenya's *Vision 2030*—which envisions a high quality of life for Kenyans, brought about by inclusive and participatory stakeholder consultation, in a clean and secure environment—to reinforce conservation safeguards and sustainable development goals. As Uganda plans for oil development in the Albertine Rift region, Marxan or a similar conservation planning method could help the country balance oil extraction activities with conservation in the Murchison Falls-Semliki landscape. Finally, all participants saw value in further educating both government agencies and other stakeholders about spatial conservation planning methods.

F.4: APPLYING CLEAN ENERGY AND SUSTAINABLE ECO-CHARCOAL TECHNOLOGY TO ADDRESS DEFORESTATION AS PART OF CLIMATE CHANGE MITIGATION IN EAST AFRICA LANDSCAPES

Collaborators

AWF and JGI

Dates

FY 2012–FY 2015

People's collection of wood to burn for household cooking and lighting needs is a driver of climate change, due to the woodland and forest degradation that the collecting causes and to the carbon that the burning emits. A solution to this problem is cleaner, more fuel-efficient cooking and lighting technologies, which can reduce fuelwood used by more than 120 pounds per household stove per year (ICEE, 2012). Such technologies have existed for years, and their adoption is a component of many REDD+ programs which ABCG members are conducting. Adoption of these technologies in Africa has been slow, however, especially when compared to their widespread promotion (Slaski & Thurber, 2009). Clean energy technologies also have health benefits: according to the Maasai Stove and Solar Project of the International Collaborative (MSSP), households with improved cook stoves experience significantly healthier indoor air quality, including 90% reductions in carbon monoxide levels.

To address this problem, Task F.4 reviewed available clean energy technologies in East Africa and researched why their uptake has been sluggish among residents. ABCG hopes the knowledge gained will spur the deployment of appropriate technologies and inform policy to increase their adoption, particularly on a scale which will increase their conservation impact.

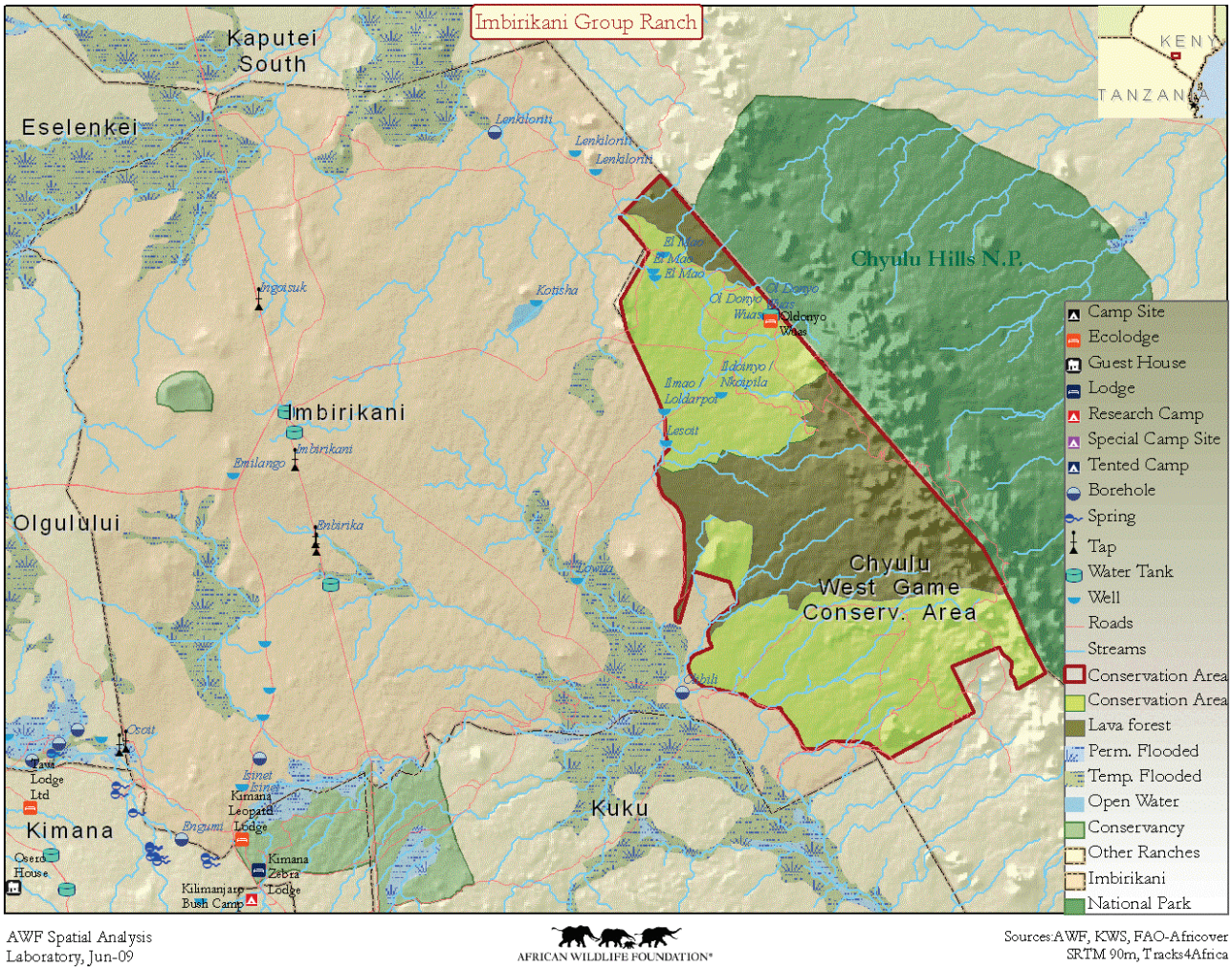


Figure 15. Map showing the location of Mbirikani Group Ranch and Chulu Hills Conservation Area.

Summary of Outputs

- *Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania*. Report on the state of clean energy technologies, and barriers to their adoption, for household cooking, lighting, and charging in Kenya and Tanzania. GVEP International. 2012.

- *Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania: Toolkit for Implementing Household Energy Projects in Conservation Areas*. A resource for implementing household clean energy projects in conservation areas in Kenya and Tanzania. Laura Clough and Kavita Rai. 2012.

- *Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania*. Summary of report on the state of clean energy technologies, and barriers to their adoption, for household cooking, lighting, and charging in Kenya and Tanzania. GVEP International. December 2012.

- *Review of Household Clean Energy Technology for Lighting Cooking and Charging in East Africa: Feedback Workshop from Imbirikani Site Survey*. GVEP International presentation about the survey it conducted to learn about household energy technologies in Mbirikani Ranch, Kenya, to inform the review it wrote in 2012. Mbirikani Ranch, Kenya. February 15, 2013.

- "Clean Energy Technologies for Cooking and Lighting—Barriers and Breakthroughs." A thematic meeting to share knowledge, challenges, and experiences on this topic with the Washington, DC-based conservation and development community. Washington, DC. September 2013.

- "Training Workshop on Clean Energy: Promotion of alternative energy, and energy saving technologies." Workshop for local stakeholders to share findings on clean energy options, experiences, and technologies, and to link cleaner energy technology entrepreneurs with financial institutions to catalyze investment and uptake. Kigoma, Tanzania. October 2013.

- Maasai Stoves and Solar Project. Implemented by AWF in FY 2014 in Mbirikani Group Ranch, Kenya. The project's goals were to raise awareness among the community of the benefits of using improved cook stoves and solar lighting technology, to build capacity in fabricating and installing improved cook stoves, to create partnerships among organizations and institutions which work on energy technologies in this region to facilitate scaling up, and to conduct outreach on clean energy policy to Kenya's National Environmental Management Authority and Climate Change Desk. (Report: *Enabling Maasai women to access improved cook stoves in Mbirikani Group Ranch, Kenya: Technical Facilitation by Maasai Stoves and Solar Project*. AWF. 2014.)

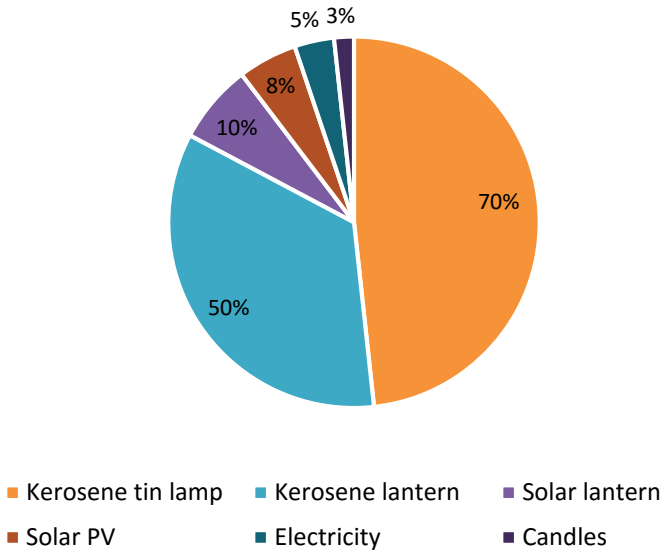


Figure 16. Types of lighting used by households surveyed in Mbirikani, southern Kenya (Clough, Rai, Macharia, Msangira, & Hughes, 2012).

Major Impacts

One of Task F.4's first activities was an inventory of technology suppliers, product types, and household energy practices in Tanzania and Kenya. *Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania* also offers insight into the poor adoption of these technologies, despite years of promotion. AWF and JGI contractor GVEP International drew on this baseline of knowledge to produce a toolkit to aid in implementing cleaner energy projects at the household level in conservation areas. Both the learning report and toolkit provide information for policy, program, and project development; sharing this information was the purpose of ABCG's Washington, DC, thematic meeting in September 2013 "Clean Energy Technology for Cooking and Lighting—Barriers and Breakthroughs: Event Summary". The task team also disseminated informational resources on this topic to targeted stakeholders, including local communities in southern Kenya, in February 2013.

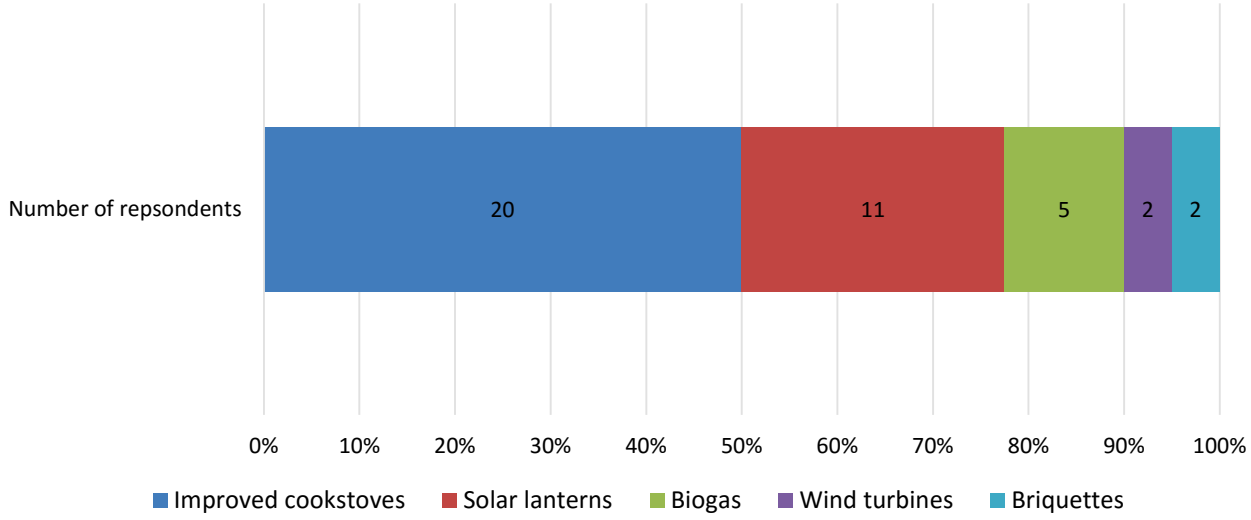


Figure 17. Number of respondents that were aware of energy products in Mbirikani, southern Kenya (Clough et al., 2012)..

BATS funding supported a multi-year project for ABCG members to conduct follow-up evaluations of clean energy technology implementations, by way of a feedback workshop and study tours with targeted communities, local product suppliers, and local technical experts. Such exchanges created opportunities to reach more communities, paving the way for further replication. For example, a women's group in Mbirikani, southern Kenya, expressed interest in the cleaner technologies, as reported by AWF field staff. A workshop in Kigoma, Tanzania, generated significant interest, drawing almost 50 attendees, including representatives of district and regional government, as per *Training Workshop on Clean Energy: Promotion of Alternative Energy and Energy Saving Technologies*. Local interest also manifested in a spike in the number of orders taken by a local energy product supplier, ARTI Energy. Moreover, institutions focusing on clean energy technologies forged partnerships with AWF to raise awareness, build capacity, and identify opportunities for scaling up.

The project outcomes progressed toward capacity building for self-reliance. Through external partnerships, AWF and the Maasai Stove and Solar Project of the International Collaborative (MSSP) trained several fabricators in Tanzania in cook stove technical design, manufacturing, construction, use and maintenance, and village organization. The partners also trained a further 20 community members on fabricating and installing improved cook stoves in several villages.

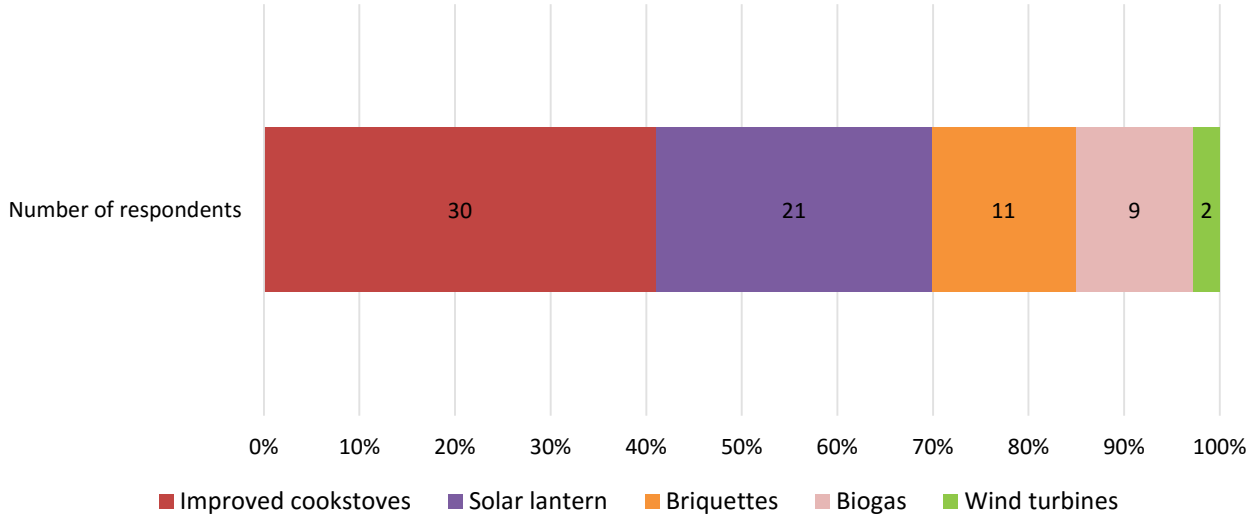


Figure 18. Number of respondents that were aware of alternative energy products in the Masito-Ugalla Landscape–Tanzania (Clough et al., 2012).

Recommendations for future action

The positive reaction of participants from the Mbirikani improved cook stoves pilot project has fostered interest by partners in other Kilimanjaro and Masito-Ugalla landscape sites. ABCG members recommend that future action target local county governance structures to take advantage of central governance devolution in Kenya. AWF wishes to engage the government of Kajiado County on policies promoting clean energy technologies. Once this develops into a county-wide pilot, it is also intended to scale up and include households in the Kuku Group Ranch where a partner organization, Maasai Wilderness Conservation Trust, works and is keen to promote the technologies. In the medium- to long-term, AWF also would like to take the technology to Lake Natron Wildlife Management Area in northern Tanzania, working with villages around the forest.

Figure 19. Maasai women on top for the roof installing the chimney. Photo courtesy of AWF.

F.5: GRAZING MANAGEMENT AND CARBON SEQUESTRATION IN COMMUNITY CONSERVANCIES OF NORTHERN KENYA

Collaborators

TNC, Northern Rangelands Trust, Syracuse University

Dates

FY 2012–FY 2015

Grasslands and savannas constitute Africa's predominant biome (CIESIN, 2007), yet these ecosystems face increasing threats and reduced carbon sequestration capacity from intensive grazing. As once-nomadic pastoralists in many areas have become more sedentary over recent decades, their livestock move less too, spending more time grazing the same grasslands, which consequently have less time to recuperate. This overgrazing combined with drought has degraded savanna soils and their productive capacity, harming grassland habitat shared by wildlife and pastoralist communities. In turn, degraded rangelands worsen pastoralism's viability as an economic activity. In addition, ecosystem deterioration due to degraded soils releases stored carbon, contributing to climate change. The situation is exacerbated by a host of socioeconomic problems pastoralist communities face, including eroded traditional governance of natural resources, shifting climate patterns, civil insecurity and inter-ethnic violence, and lack of formal land tenure.

Healthy, sustainably grazed rangelands thus hold promise not only to contribute to carbon sequestration and biodiversity, but also to improve the livelihoods of pastoralist communities. The science of soil carbon sequestration significantly lags behind that of forest carbon sequestration, however. ABCG Task F.5 sought to discover whether alternative grazing regimes can be implemented successfully in rangelands, and if so whether they result in changes to rangeland health, including carbon sequestration. The target for this task was the community conservancies—organized group ranches with land management plans—in the Northern Rangelands Trust (NRT), under an initiative called the Northern Kenya Carbon Project.

Figure 20. Planned grazing meeting in northern Kenya. Photo courtesy of TNC.

Summary of Outputs

- Trained grazing coordinators and rangeland monitoring and evaluation (M&E) teams; a report following a trainer-of-trainer workshop involving new grazing coordinators, their managers and board chairpersons; and including discussions on progress made on implementing grazing management plans.
- Established methodological sampling stations. A report on the methods of empirically determining the effects of grazing management regimes on soil quality and soil carbon;
- Grazing By-Laws Development Workshop. A workshop report on the discussion and development of harmonizing rules and rights on access to various rangeland resources, settlement patterns, etc. for community conservancies in northern Kenya;
- Held two workshops on integrated grazing. Aimed at each conservancy, with the aim of building capacity for conservancy leadership and management of grazing resources;
- Held grazing plan dissemination meetings, reaching hundreds of residents per conservancy;
- Compiled soil carbon and rangeland health baselines for participating NRT Conservancies; including analysis of soil and vegetation survey databases, as a basis for carbon modeling and validation;
- Created a biodiversity baseline to monitor the benefits to flora and fauna as an outcome of the alternative grazing management regime.

Figure 21. Soil carbon sampling corer in northern Kenya. Photo courtesy of TNC.

Major Impacts

One of the task's goals was to investigate how grazing and other land management techniques affect soil carbon in grasslands. ABCG member TNC, with external collaborators Kenya's Northern Rangelands Trust (NRT) and the Biology Department of Syracuse University, in New York, developed a predictive model for SOC measurements (SNAP soil carbon model). The SNAP model predicted that planned grazing management can significantly restore SOC and productivity of the conservancies' grasslands. In addition, the SNAP model has been statistically verified to be within the required accuracy for the Verified Carbon Standard (VCS), creating an opportunity for NRT to earn income from its soil conservation. The SNAP soil carbon model—as applied in the NRT conservancies—predicted SOC with a greater than 75 percent accuracy rate, within the required accuracy for the VCS; this finding was published in the article, "Plant compensation to grazing and soil carbon dynamics in a tropical grassland". The task team also established SOC and vegetation baselines for ecosystem health and biodiversity monitoring. These baselines provided evidence that past improved grazing management in had increased biodiversity, particularly trees and herbaceous plants.

Task team members also explored cost-effective methods to monitor vegetation. In 2014, the collaborators took steps toward a tracking method for integrated grazing management impacts: the satellite-based Normalized Difference Vegetation Index (NDVI) maps of "greenness" changes were found useful in identifying previous grazing areas, verifying herder compliance with rotational grazing plans, monitoring large-scale livestock movements, and anticipating conflicts among different pastoralist groups in common rangelands. Team members tested a remote sensing model to detect changes in grazing intensity across the NRT project area, as discussed in *Validation of a remote sensing method of estimating grazing impacts in northern Kenya rangelands*.

With such evidence in hand, the task team worked to increase NRT's management and organizational capacity for integrated grazing. In 2012, collaborators conducted 16 workshops in eight conservancies, reaching 800 people, 30 percent of whom were women, 51 percent elders, and 19 percent youth. Ultimately, more than 2,300 people received training in better planned grazing approaches. In addition, 10 grazing plan dissemination meetings (or learning events), reaching 500 people per conservancy, were conducted. In 2013, the team held two training-of-trainer workshops with 39 participants from nine conservancies; participants were trained to be Grazing Coordinators and NRT Regional Coordinators, skilled positions aimed at implementing and sustaining planned grazing management operations.

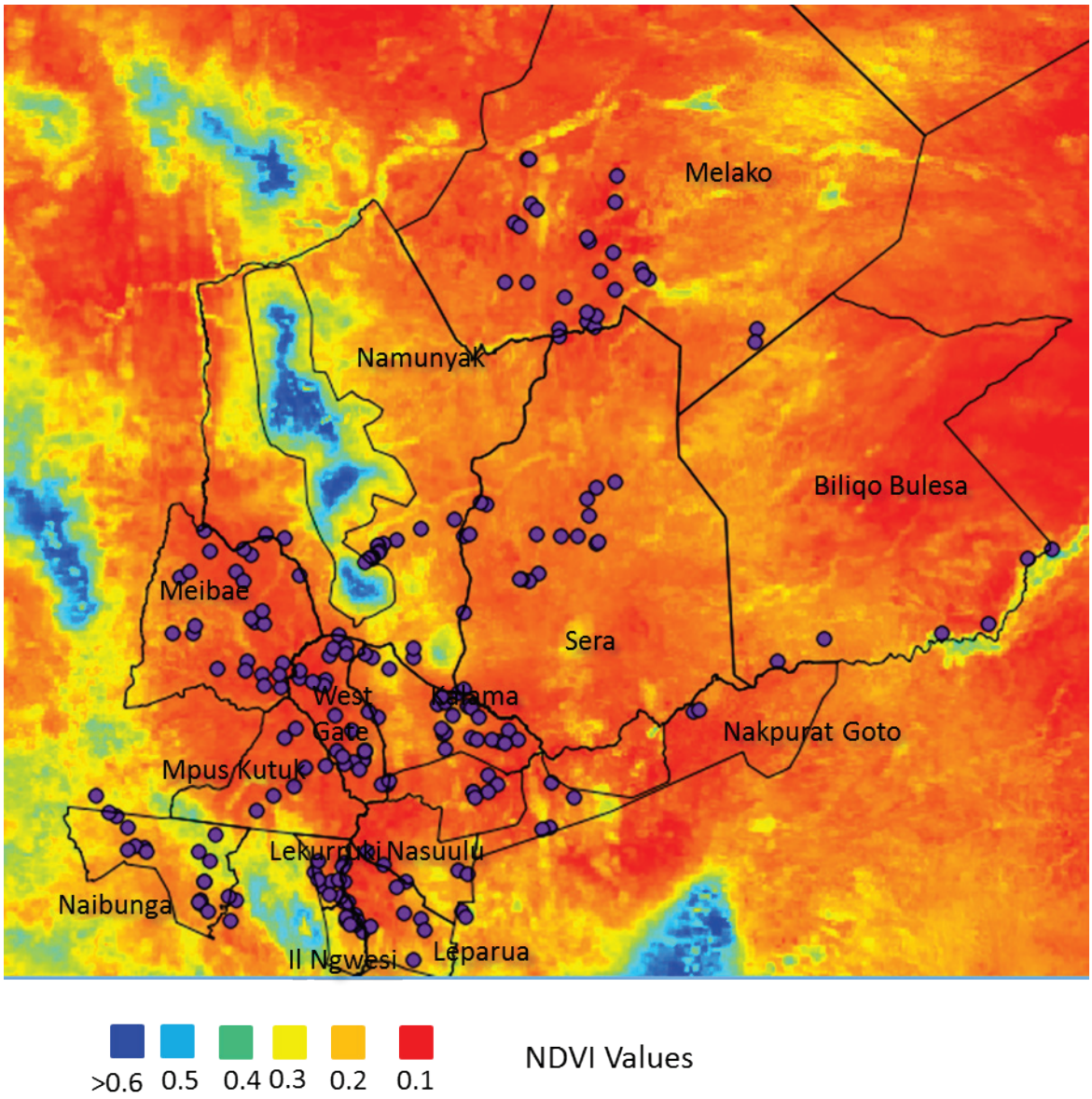


Figure 22. Distribution of soil and vegetation sampling points across the 14 participating NRT conservancies participating in the Northern Kenya Carbon Project.
Background is long-term average June NDVI, which was used in assessing long-term grazing intensity for the validation of the SNAP soil carbon model.

Recommendations for future action

The Northern Kenya Carbon Project presents an opportunity for soil carbon to be a conservation financing strategy. Annual net revenues of $1 million potentially could support a large portion of NRT Conservancies' wildlife protection, monitoring, and management efforts. The project also could be a prototype for a new approach to soil carbon projects which extend climate change mitigation finance to grasslands and savannas throughout Africa and possibly tropical grasslands on other continents. TNC, in collaboration with NRT, plans to implement the following measures:

- Continue supporting implementation and expansion of planned grazing in the NRT Conservancies;

- Complete VCS certification;
- Establish tourist carbon credit payment mechanism, secure purchase contracts with corporate social responsibility buyers;
- Create guidance on how to improve access to carbon markets possibly using basket funds or some grouping which will allow for better economies of scale;
- Create a roadmap for expansion beyond northern Kenya, including incorporating new ecological, sociocultural, and economic factors and;
- Write a concise and sellable description, potentially combined with a short film, to help expansion to other areas.

G BRIDGING THE GAP BETWEEN GLOBAL HEALTH AND BIODIVERSITY:

Human health and biodiversity have a complex, intertwined relationship in which changes in the integrity of biodiversity can affect the functioning of ecosystems on which human communities depend. These connections are myriad, and scholarship continuously reveals new ones. Unfortunately, some of these linkages only come to light after the balance between environmental and human health is disrupted, with negative consequences for one or both elements. In Task G, ABCG examined ways to preserve the beneficial links between human and biodiversity health while addressing threats to them. Task G.1 focused on the relationships between HIV/AIDS and biodiveristy conservation, and Task G.2 addressed human and biodiversity health through combining sanitation, hygiene, and conservation practices with regard to freshwater systems.

G.1: HIV/AIDS AND CONSERVATION LINKAGES

Collaborators

JGI and the ABCG Coordinator

Dates

FY 2011–FY 2014

In 2014, 25.8 million people in sub-Saharan Africa, or nearly one in 20 adults, were living with HIV. That same year, 790,000 people in the region died of AIDS-related causes (UNAIDS, 2015). The HIV/AIDS epidemic has shaken many sectors of African societies, and the conservation and natural resources domains have not been spared. On one hand, the disease affects people's use of natural resources. For example, when a family loses its main income-earners, remaining members often turn to natural resource use as a safety net, engaging in practices which might not be sustainable long-term and/or on a large scale. On the other hand, conservation organizations themselves suffer when their employees or their families are stricken with HIV/AIDS. The loss of NGO human resource capacity, for instance, impairs organizations' institutional memory, program continuity, and achievement of conservation goals.

ABCG recognized HIV/AIDS as a significant emerging threat to biodiversity conservation, and also recognized the role its field programs could play in heading off the disease and its impacts. Task G.1 worked to equip ABCG members to take action both in their workplaces and their communities to effect positive change against the HIV/AIDS epidemic.

Summary of Outputs

- *HIV/AIDS and Environment: A Manual for Conservation Organizations on Impacts and Responses*. This manual educates conservation professionals about the linkages between HIV/AIDS and the environment, and provides guidance to conservation organizations on actions they can take to reduce the impacts on their organizations, the communities they partner with, and the environment. Judy Oglethorpe, Terri Lukas, Nancy Gelman, Kame Westerman, and Julius Zelothe. 2013.

Early activities detailed the repercussions of HIV/AIDS on an organization, including:

- *Dealing with the Challenges of HIV/AIDS at the College of African Wildlife Management-Mweka, Tanzania*. Presentation delivered at USAID, Washington, DC. Julius Zelothe. July 22, 2008.
- *A case study by the Wildlife and Environmental Society of Malawi which analyzed its financial costs of HIV/AIDS on the environment*. A presentation on the financial costs of HIV/AIDS to some environmental organizations in Malawi. Delivered at the Society for Conservation Biology Africa Section Meeting in Arusha, Tanzania. June 16, 2011.

Later activities demonstrated actions by NGOs to address HIV/AIDS's impacts at various levels of society:

- *HIV/AIDS Integration in Conservation Programs—the case of JGI TACARE project.* Presentation of a JGI case study in incorporating HIV/AIDS into community-based conservation and development activities, including challenges and recommendations. Delivered by Mary Mavanza in Kigoma, Tanzania, June 16, 2011.
- *Mainstreaming HIV/AIDS into NRM: AWF's AIDS Organizational Policy*. Presentation about AWF's adoption of an HIV/AIDS workplace policy and program, and prevention programs with partner organizations and local communities. Delivered at Society for Conservation Biology Africa Section Meeting, June 16, 2011.
- *Girls Peer-to-Peer Education: Equipping young women in Uganda to navigate life's challenges*. Workshops to equip girls and teachers with knowledge on reproductive health and skills to deal with HIV/AIDS-associated issues. JGI. FY 2011.
- *Report on a Training Workshop on HIV & AIDS and Environment*. Workshop on equipping conservation groups to mitigate HIV and AIDS in the workplace. Organized by JGI to educate JGI staff and African-partner-organization staff about HIV/AIDS and the connections between the disease and the environment, and to instruct attendees on designing strategies to address HIV/AIDS. Kigoma, Tanzania. November 4–6, 2013.

Major Impacts

Despite the effects of HIV/AIDS on African societies broadly and on conservation and natural resources specifically, little information on the epidemic's conservation impacts and appropriate responses had been available to the conservation community. Task G.1 created a number of outputs to fill this gap. In 2008 WWF and partners wrote, *HIV/AIDS and Environment: A Manual for Conservation Organizations on Impacts and Responses*. Members adapted the manual's content into products relevant for their particular organizations; for instance, JGI drew on it to develop a HIV and AIDS policy for its regional offices. A follow-up guide was published in 2013: *HIV/AIDS and Environment: A Training Guide for Conservation Organizations*. ABCG partnered with the College of African Wildlife Management (CAWM) in 2008 to assess the impacts of HIV/AIDS (*Dealing with the Challenges of HIV/AIDS at the College of African Wildlife Management-Mweka, Tanzania*). Drawing on these and other ABCG HIV/AIDS resources, JGI worked with CAWM to design teaching modules for future wildlife managers on HIV/AIDS and conservation management coping strategies. In 2013, ABCG and JGI organized a workshop, *Equipping Conservation Groups to Mitigate HIV and AIDS in the Workplace*, for more than 30 attendees from JGI and partner NGOs, local government officials, and national park managers. The

event educated about HIV/AIDS's impacts on the conservation sector and encouraged participants to develop HIV/AIDS policies and programs in their own workplaces and communities. Attendees also wrote individual commitments to act to mitigate HIV/AIDS in their organizations and own lives.

Figure 23. Surveying a village resident in Kigoma, Tanzania as part of a participatory rural appraisal to identify priority factors to address for community social and economic development. Photo courtesy of JGI.

JGI also integrated HIV/AIDS awareness into a number of its educational programs. The NGO held workshops in western Uganda in FY 2011 to train girls to be peer-to-peer educators—educating them about reproductive health, about dealing with HIV/AIDS-associated problems, and about communicating such knowledge to other girls (see also ABCG 2011 Annual Report). Workshop attendees hailed from more than 20 schools in communities near high value wildlife conservation areas. Follow-up work showed that school attendance of the peer-to-peer educators had improved and that they had strengthened their information-sharing relationships with their classmates. One of the activities of JGI's Roots & Shoots program is training female teachers and students to become peer educators on HIV/AIDS and health. In 2010, the program trained 171 participants, who in turn educated approximately 3,325 students, 200 teachers, and at least 1,475 parents. Thanks to this peer education, 156 girls have remained in school. The findings are published in the report entitled *HIV/AIDS Peer Education Program, Uganda: Annual Report*. Further, in 2011, the Roots & Shoots program also provided 60 schools with essential equipment including exercise books, pencils, pens and sanitary towels to ensure that girls remain in school.

Recommendations for future action

The report, *HIV/AIDS and Environment: A Manual for Conservation Organizations on Impacts and Responses*, has been and continues to be a crucial resource for international NGOs and Africa-based NGOs alike. ABCG recommends broader dissemination of the manual and related training materials, as well as translation of them into French for use in francophone Africa. In addition, it would be useful to adapt and replicate workshops given by ABCG members on HIV/AIDS in the workplace, such as Mainstreaming HIV/AIDS into NRM: AWF's AIDS Organizational Policy. The materials and events would be of particular value in regions of Africa with high disease rates, and in places where people live away from their families for work, such as logging and mining concessions.

Furthermore, Task G.1 materials and practices apply and could be adapted for emergences of zoonotic diseases such as Ebola. ABCG members could study the recent Ebola outbreaks in West and Central Africa to adapt the tools for this type of conservation threat.

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

Collaborators

AWF, CI, and TNC

Dates

FY 2012–FY 2015

Clean freshwater systems are essential to human health and to environmental health. Good human hygiene and sanitation practices and good environmental practices are also essential to freshwater health. Given this bond, it would seem natural for water, sanitation, and hygiene (WASH) practitioners and biodiversity practitioners to work together on freshwater issues. But historically WASH and biodiversity conservation have been considered incompatible, not because of insurmountable factors but by the lack of a comprehensive approach to integrating the two sectors. Recognizing that development projects which connect conservation and WASH goals can accomplish more, and more cost-effectively, than single-sector efforts, ABCG set out to bridge these two communities.

The goal of Task G.2 was to increase collaboration among organizations working in sub-Saharan Africa on WASH and freshwater ecosystem conservation projects, in order to achieve simultaneous health and environment goals through more holistic, integrated approaches.

Summary of Outputs

- *Linking Biodiversity Conservation and Water, Sanitation, and Hygiene: Experiences from sub-Saharan Africa*. White paper analyzing 43 projects in Africa that have worked across health and conservation sectors to improve human wellbeing and protect water resources, and offering lessons, challenges, and opportunities learned from the projects. David Bonnardeaux. 2012.
- Freshwater Conservation and WASH Integration Workshop. Workshop to increase awareness of the value of integrated water programs, and to gather input for developing freshwater conservation and WASH guidelines. 26 participants from ABCG member NGOs, WASH groups, and other NGOs working in Sub-Saharan Africa. Represents first time WASH and freshwater conservation professionals came together to craft an integrated vision for health, development, and conservation goals. Washington, DC. May 22–23, 2013.
- *Freshwater Conservation and Water, Sanitation, and Hygiene Integration Guidelines: A Framework for Implementation in sub-Saharan Africa*. Drawing on input from the May 2013 Freshwater Conservation and WASH Integration Workshop, this report provides guidance to health, development, and conservation professionals in sub-Saharan Africa on how to plan, coordinate, develop, and achieve mutually supported WASH and freshwater conservation project outcomes. Contains joint statement supporting integrated freshwater approaches, signed by nine NGOs. Janet Edmond, Colleen Sorto, Sarah Davidson, John Sauer, Dennis Warner, Marc Dettman, and Jennifer Platt. 2013. (Press-quality version of report also available.)
- Workshop on Integrated Indicators for Freshwater Conservation and WASH Programming. Workshop for African conservation, health, and development practitioners to design a monitoring and evaluation framework for integrated WASH and freshwater conservation programming. Nairobi, Kenya. July 15–17, 2014.

- *ABCG Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators*. Draft framework for assessing the outcomes of integrated WASH and freshwater conservation projects. Designed at the July 2014 indicators workshop in Nairobi. ABCG. 2014.

Figure 24. Open-air laundry, clothes washing on the banks of the Niger River in Bamako, Mali. Photo: © Tanya Petersen / WWF-Canon.

Major Impacts

The Task G.2 team conducted outreach to inform stakeholders about *Linking Biodiversity Conservation and Water, Sanitation, and Hygiene: Experiences from sub-Saharan Africa* (above). CI and TNC distributed *Linking Biodiversity Conservation and Water, Sanitation, and Hygiene*, a four-page summary document of the white paper, at World Water Week in 2012. Janet Edmond, of CI, gave an ABCG brown bag presentation on July 18, 2012, to release the report and present its findings and recommendations. On September 11, 2012, the Wilson Center's Environmental Change and Security Program hosted an event at which report author David Bonnardeaux discussed his findings.

After the "Freshwater Conservation and WASH Integration Workshop" (above) in May 2013, several participants drafted the guidelines proposed at the event, then compiled and circulated them for technical review by 15 NGOs from the WASH and conservation sectors. In the following months, the guidelines featured at two international conferences. The first was at World Water Week 2013, in September in Stockholm, Sweden, where two seminars spotlighted the guidelines: *Nature Based Solutions: Opportunities for Collaboration*, and in Sarah Davidson's (TNC) talk during *Collaboration in Watershed Management and Conservation*. The September 2nd *World Water Week Daily* also highlighted the guidelines. The second event was the World Wilderness Congress in Salamanca, Spain, in October 2013, at which Dennis Warner of Millennium Water Alliance presented about WASH-conservation integration.

The Task G.2 team launched *Freshwater Conservation and Water, Sanitation, and Hygiene Integration Guidelines: A Framework for Implementation in sub-Saharan Africa* (above) at an event on December 11, 2013.

Over the course of conversations at the May 2013 integration workshop and in ensuring months, the Task G.2 team and partners realized guidelines alone could not ensure the success of integrated WASH programming; a monitoring and evaluation framework was necessary too. To create a framework that best capitalized on the expertise of African WASH and freshwater conservation practitioners, the team held the Workshop on Integrated Indicators for Freshwater Conservation and WASH Programming (above) in Nairobi, Kenya, in July 2014. Attended by more than 25 experts from Kenya, Malawi, Rwanda, Tanzania, and Uganda, the event was the first time professionals from the two sectors had come together for this purpose.

To inform the Washington, DC, WASH and freshwater conservation communities about the Nairobi workshop and release the draft version of the *ABCG Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators* (above), the ABCG partners gave a presentation in Arlington, VA, on September 30, 2014: Highlights from the Integrated Freshwater Conservation and WASH M&E Workshop.

Recommended Future Actions

To maximize the value of the resources that the Task G.2 team invested in developing the integrated WASH freshwater conservation guidelines and draft M&E framework and indicators, ABCG recommends that the team finalize the M&E framework and indicators in the early phase of any future activity suite.

Table 2. Valued Added Indicators

GENDER	GOVERNANCE AND POLICY	COMMUNITY CAPACITY	PEACE + PROTECTION	YOUTH
%/# of institutions with accessible sanitation facilities for both sexes (including disabled)	# of people aware of WASH or freshwater conservation (FC) related-policies	% of community member groups involved in the management of freshwater resources	# of water-related conflict incidences reported over time by the community	% of youth in decision-making in community-based WASH and FC structures
# of laws, policies or procedures drafted, proposed or adopted by community to promote gender equality in integrated FW-WASH project participation and benefits	# of forums carried out to engage the community to debate and influence WASH and FC policies	#/% of water management committees trained in management and maintenance of water and sanitation infrastructure/CBNRM	% of community reported water-related conflicts incidents successfully resolved	% of leadership positions held by youth in CBNRM and WASH committees
% of women in decision-making positions in community-based WASH and freshwater conservation	# of people satisfied with WASH/FC interventions being implemented	% of community members understanding and acknowledging co-management roles, responsibilities and obligations for riparian catchment	Ratio of new cases of community reported water-related conflict incidents to cases resolved in the previous three years (efficiency)	# of youth employment
# of HH reached with WASH and conservation program intervention (sex disaggregated)	# of community managed institutions focusing on integrated WASH-FC	#/% of communities able to renew, replace and rehabilitate their water infrastructure	# of available mechanisms to resolve disputes/% of population trained in conflict resolution	#/% of youth taking up WASH businesses
%/# of women involved in the planning, design or implementation of integrated WASH-freshwater conservation interventions	# of community level decision making bodies with progressive and transparent policy and budget processes	#/% of WMC/private operators functioning 3+ years after project completion	% of watershed with clearly determined land rights title	% of youth trained in life-skills
	% of representation by marginalized groups in community level decision making bodies related to WASH or FC	# of water-based enterprises (related to WASH and FC)	% of people aware of individual water resource user rights	
	# of people participating in accountability mechanism (define as level and quality) for integrated WASH-FC	% of households accessing and utilizing water for production (e.g. crop, livestock)	% of community with equitable access to water	
	# of changes or successful negotiations due to citizen participation	#/% households engaged in alternative livelihood activities	# of community water users (proportion to available water sources)	

GENDER	GOVERNANCE AND POLICY	COMMUNITY CAPACITY	PEACE + PROTECTION	YOUTH
	# of marginalized communities articulating and voicing demands for WASH and FC	Access to credit, diversity of income (varied units of measure applicable)	*Considering additional indicator to address resilience of water supply, systems, and management entities to extreme events	
	# of spaces and mechanisms for institutionalized participation in policy formulation, planning and implementation			
	# and type of financial incentives designed to facilitate better (improved) access to WASH services and products			
	% of water provision services provided by public authorities			
	% 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)			
	% of water points/water supply utility that is non-revenue			

H FORECASTING AND ANALYZING CONSERVATION NEEDS AND BUILDING CAPACITY ON CRITICAL ISSUES:

ABCG has a good grasp of the realm of Africa's biodiversity, with member organizations working on numerous conservation issues on the ground in many locales. ABCG members are therefore well placed to perceive African biodiversity conservation issues while still on the horizon. This ability enables ABCG to help USAID and African partners prepare to address the issues. Anticipating future conservation needs and opportunities also allows ABCG members and their partners to allocate their limited resources wisely. This section includes themes identified as emerging issues or opportunities in African biodiversity conservation.

H.1: LARGE-SCALE LAND ACQUISITIONS AND BIODIVERSITY CONSERVATION IN AFRICA

Collaborators

AWF, JGI, and WRI

Dates

FY 2012–FY 2015

Places with high biodiversity value often occur outside formal protected areas, exposing wildlife and other resources to a range of possible threats, including incompatible and unregulated land use and its consequent habitat degradation. An example of this in Africa is the growing phenomenon of industrial-scale agriculture, which is preceded by the acquisition of large tracts of land, frequently by corporate and/or foreign interests. A worrying aspect of this trend is that purchasers often target countries with weak legal frameworks for rural land rights and with sparsely regulated business environments (Deininger et al., 2011). The practice therefore jeopardizes not only biodiversity but also rural communities.

ABCG pursued this emerging theme due to a lack of adequate national and regional response in Africa to safeguard ecological resources and rural livelihoods from large-scale land acquisition (LSLA). The task's aim was to protect biodiversity and other ecosystem services important for rural people and their livelihoods from the threat of poorly planned LSLAs for agricultural production.

Summary of Outputs

- JGI research on LSLA in the Masito-Ugalla ecosystem of western Tanzania. With technical support from Google Earth Outreach, produced spatial models of potential conflict between agriculture and biodiversity, with special emphasis on chimpanzees (see Figure 25). 2012.
- *Risk Maps for Uganda*. High resolution maps of Uganda illustrating suitability for agriculture production based on threat posed to biodiversity, for *Jatropha curcas*, maize, oil palm, and sugar (e.g. Figure 26). Produced in cooperation with Uganda Investment Authority (UIA). WRI. 2012.

- *Report on the Investment Environment and Safeguards Applicable to Large-Scale Agricultural Investments in Uganda*. Assesses the governmental framework for agriculture land acquisition in Uganda, and its safeguards and impacts on biodiversity and natural resources. M. Mercedes Stickler. 2012.
- *Due diligence on lands at risk of or subject to land acquisitions in Uganda*. Examines the social, economic, and environmental effects of LSLAs on rural communities in Uganda, and recommends alternative approaches. M. Mercedes Stickler. 2012.

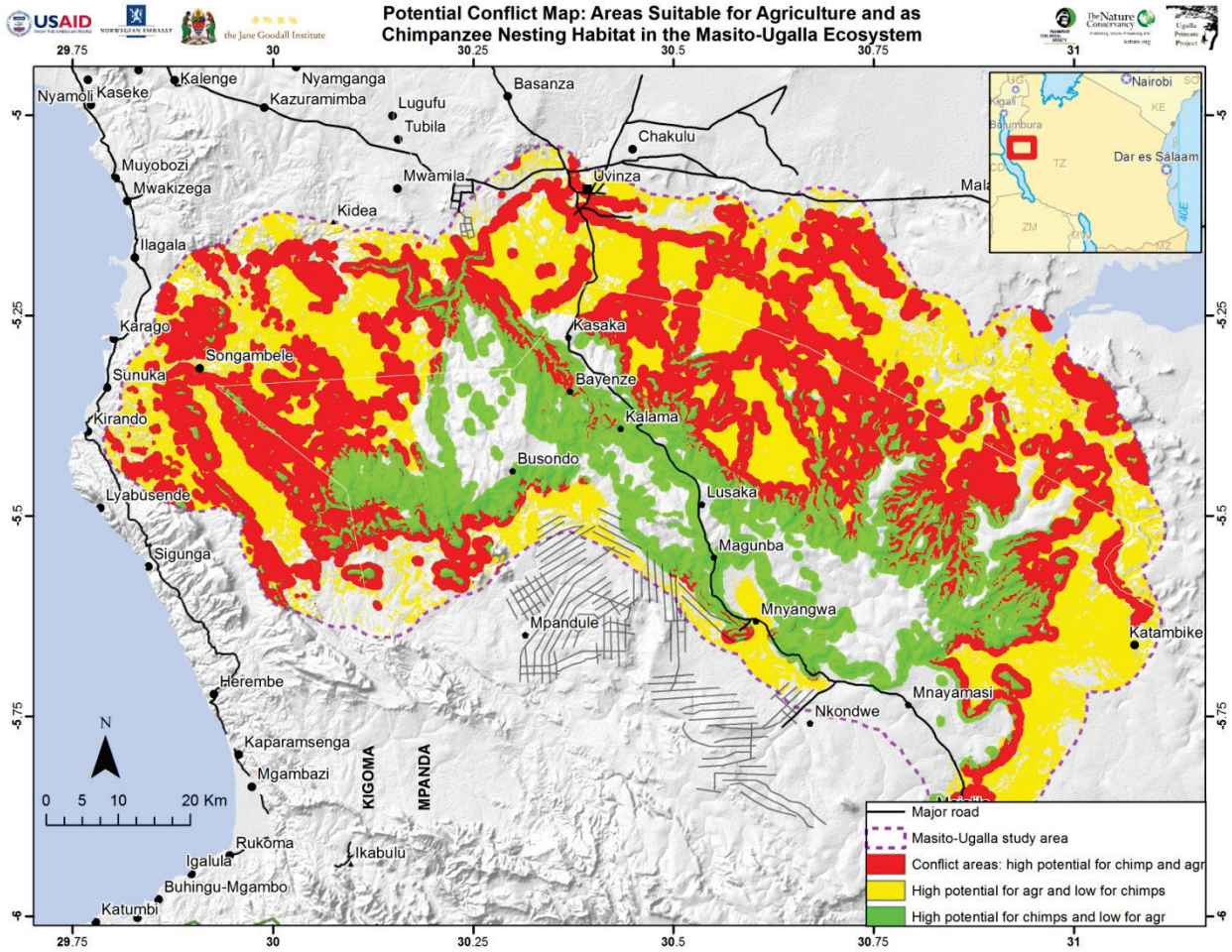


Figure 25. Map of potential conflict between chimpanzee habitat and agriculture in Masito-Ugalla ecosystem, Tanzania.

- *The Role of Kenya's National Investment Authority in Identifying and Allocating Land for Private Investment.* Examines the legal basis and role of the Kenya Investment Authority in identifying and allocating land for private investment, especially for large-scale agricultural production. ABCG. 2012.
- *Large-Scale Land Acquisitions in Kenya: Environmental and Social Impacts*. Documents the environmental, economic, and social impacts of four proposed LSLAs in Kenya. ABCG. 2013.

- *An Assessment of Community Participation in Land Acquisitions in Mozambique and Tanzania*. Investigates community land acquisition policies in Tanzania and Mozambique. WRI. March 2015.
- *Regulatory Reform as a Path to Promote Gender-Equitable and Participatory Community Decision-making Processes on Land Investments*. Report examining role of women in land-acquisition decision-making, with case studies in Mozambique, Tanzania and the Philippines. Presented at 2015 World Bank Conference on Land and Poverty. Celine Salcedo-La Viña and Maitri Morarji. Washington, DC, March 23–27, 2015.
- Potential Conflict Map: Areas Suitable for Agriculture and as Chimpanzee Nesting Habitat in the Masito-Ugalla Ecosystem (Figure 25). Map to help prioritize areas for agriculture use and chimpanzee conservation in Masito-Ugalla ecosystem. JGI. 2012.
- *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*. Workshop on Marxan and its decision-making uses. Attendees analyzed tradeoffs of various land-use scenarios. Nairobi, Kenya. September 18–19, 2013.
- JGI use of unmanned aerial vehicles (UAV) for mapping as a land-use verification exercise; as part of monitoring of village land use plan implementation in western Tanzania. Additionally a nationwide community forest management policy known as the Local Authority Forest Reserve (LAFR) employs village forest monitors, partly trained with USAID/BATS support, as boots on the ground with the additional role of collecting and reporting information on land acquisition cases in Tanzania.
- *Assessment of the Impact of Voluntary Guidelines on the Responsible Governance of Tenure (VGS) on Environmental and Social Safeguards in SAGCOT Region*. Analyzes LSLAs' impacts on rural communities and ecosystem services in the Southern Agriculture Corridor of Tanzania (SAGCOT). Barefoot Education for Afrika Trust. 2013.
- *Large Scale Land Acquisitions in Ethiopia: Implications for biodiversity and communities*. Examines the effects of LSLAs in Ethiopia on community livelihoods, biodiversity resources, and ecosystem services. Sue Mbaya. 2015.

Major Impacts

In 2012, WRI analyzed the statutory and regulatory framework for agriculture investment in Uganda and its social and environmental safeguards, the social and environmental impacts of recent LSLAs, and recommendations for future acquisitions in the country. The main output of this research was *Report on the Investment Environment and Safeguards Applicable to Large-Scale Agricultural Investments in Uganda* (above). Author Mercedes Stickler (WRI) presented a version of the report, *Governance of Large-Scale Land Acquisitions in Uganda: The role of the Uganda Investment Authority*, at the International Conference on Global Land Grabbing II, October 17–19, 2012 in Ithaca, NY. WRI also produced maps detailing the suitability of producing *Jatropha curcas*, maize, oil palm, and sugar in Uganda based on the risk the crops pose to biodiversity. Finally, in cooperation with UIA, the Uganda Land Commission (ULC), and several Ugandan NGOs, WRI examined the social, economic, and environmental effects of

LSLAs on rural communities in Uganda: *Due diligence on lands at risk of or subject to land acquisitions in Uganda*. It is hoped these products will help inform Ugandan policymaking on LSLAs.

WRI conducted similar LSLA analysis work in Kenya in 2012 and 2013. *Large-Scale Land Acquisitions in Kenya: Environmental and Social Impacts*, documented the environmental, economic, and social impacts of four proposed LASAs in Kenya. A case study, entitled *The Role of Kenya's National Investment Authority in Identifying and Allocating Land for Private Investment*, examined the legal basis and role of the Kenya Investment Authority in identifying and allocating land for private investment, especially for large-scale agricultural production.

WRI conducted additional LSLA analysis in 2015, on community lands in Tanzania and Mozambique in *An Assessment of Community Participation in Land Acquisitions in Mozambique and Tanzania*, and on women's roles in LSLA decision-making in *Regulatory Reform as a Path to Promote Gender-Equitable and Participatory Community Decision-making Processes on Land Investments*, which contains case studies from Mozambique, Tanzania, and the Philippines.

Table 3. Top 10 Target Countries for Land Acquisitions

Concluded Deals		**Intended Deals**	
Country	**Amount of land**	**Country**	**Amount of land**
Indonesia	5,909,510 ha	Indonesia	2,273,073 ha
South Sudan	4,862,573 ha	Philippines	2,098,500 ha
Papua New Guinea	3,799,169 ha	Sudan	1,617,253 ha
Mozambique	3,064,086 ha	South Sudan	1,371,120 ha
DRC	2,898,158 ha	Sierra Leone	877,017 ha
Sudan	2,886,266 ha	Mozambique	860,319 ha
Philippines	2,230,650 ha	Uganda	850,127 ha
Congo	2,202,000 ha	Angola	757,000 ha
Sierra Leone	2,116,040 ha	Madagascar	607,000 ha
Russian Federation	1,739,948 ha	Tanzania	586,117 ha

Source: Land Matrix data (LandMatrix.org, 2015).

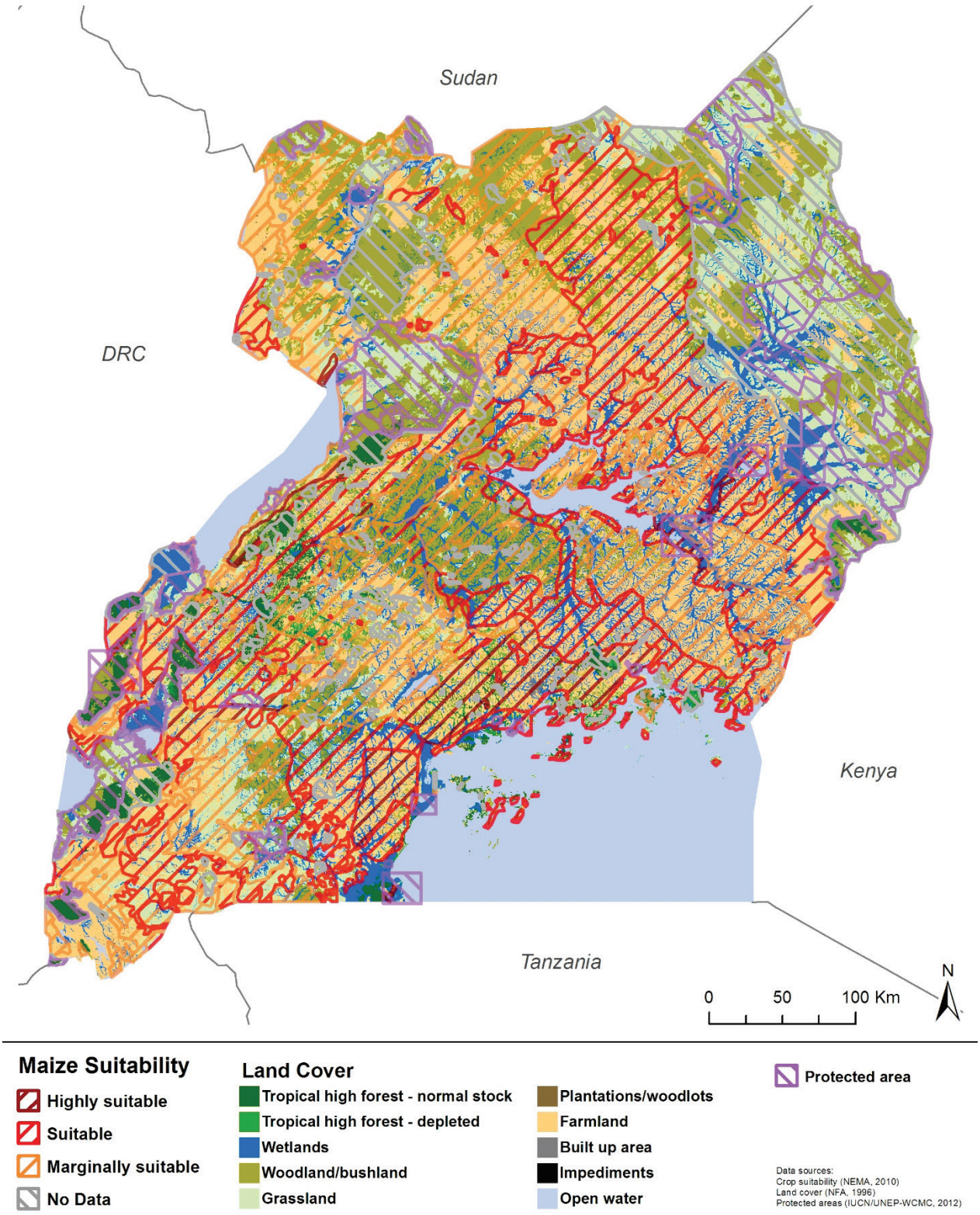


Figure 26. Biodiversity risk map for Uganda: Land acquisition and investments for maize. Courtesy, WRI.

JGI focused its Task H.1 work on the conversion of forests to agriculture in the Masito-Ugalla ecosystem of western Tanzania. In 2012, JGI used UAV technology to map chimpanzee habitat in

difficult terrain. The results were a first-ever spatial model identifying areas for agriculture production and for chimpanzee conservation of the potential conflict resulting from the threat of agriculture to chimpanzee habitat (Figure 25). In an activity which overlapped with Task *F.3: Understanding Carbon Flux Under Conditions of Climate Change: Woodlands and Trade-Offs*, JGI and Masito-Ugalla community members created a map of optimal conservation and other land uses for the landscape. Combining knowledge and opinions from the community with existing spatial data of the area, JGI used Marxan conservation planning decision software to plot the map so as to balance conservation goals with agricultural production, infrastructure development, and other land uses, with the goal of reducing the potential costs and conflicts of all stakeholders (Figure 27). (JGI partnered with WCS and AWF in implementing Task F.3). In addition, to assist in monitoring land cover change for village land-use plans, JGI developed a GIS-based interface for use on mobile devices to collect data on threats to woodlands and forests—a form which standardizes data collection on land acquisitions. See *New Form (Land acquisition) to be used with ODK app and Android smartphones and tablets (English and Swahili versions)*. JGI trained more than 90 forest monitors in the technology.

AWF contributed to Task H.1 too. In the Southern Agriculture Corridor of Tanzania (SAGCOT), AWF analyzed the implications of LSLAs on rural communities and ecosystem services, highlighting issues from land governance problems, water and other natural resource management challenges, to investor–community tensions and conflicts including displacement of villages. The resulting report is: *Assessment of the Impact of Voluntary Guidelines on the Responsible Governance of Tenure (VGs) on Environmental and Social Safeguards in SAGCOT Region*). AWF also researched the effects of LSLAs in Ethiopia on community livelihoods, biodiversity resources, and ecosystem services, an issue of particular interest given high growth in the country's agricultural sector. A planned field study had to be canceled due to insecurity in the targeted sites. *Large-Scale Land Acquisitions in Ethiopia: Implications for Biodiversity and Communities* also made recommendations to address gaps in areas affecting natural resource conservation.

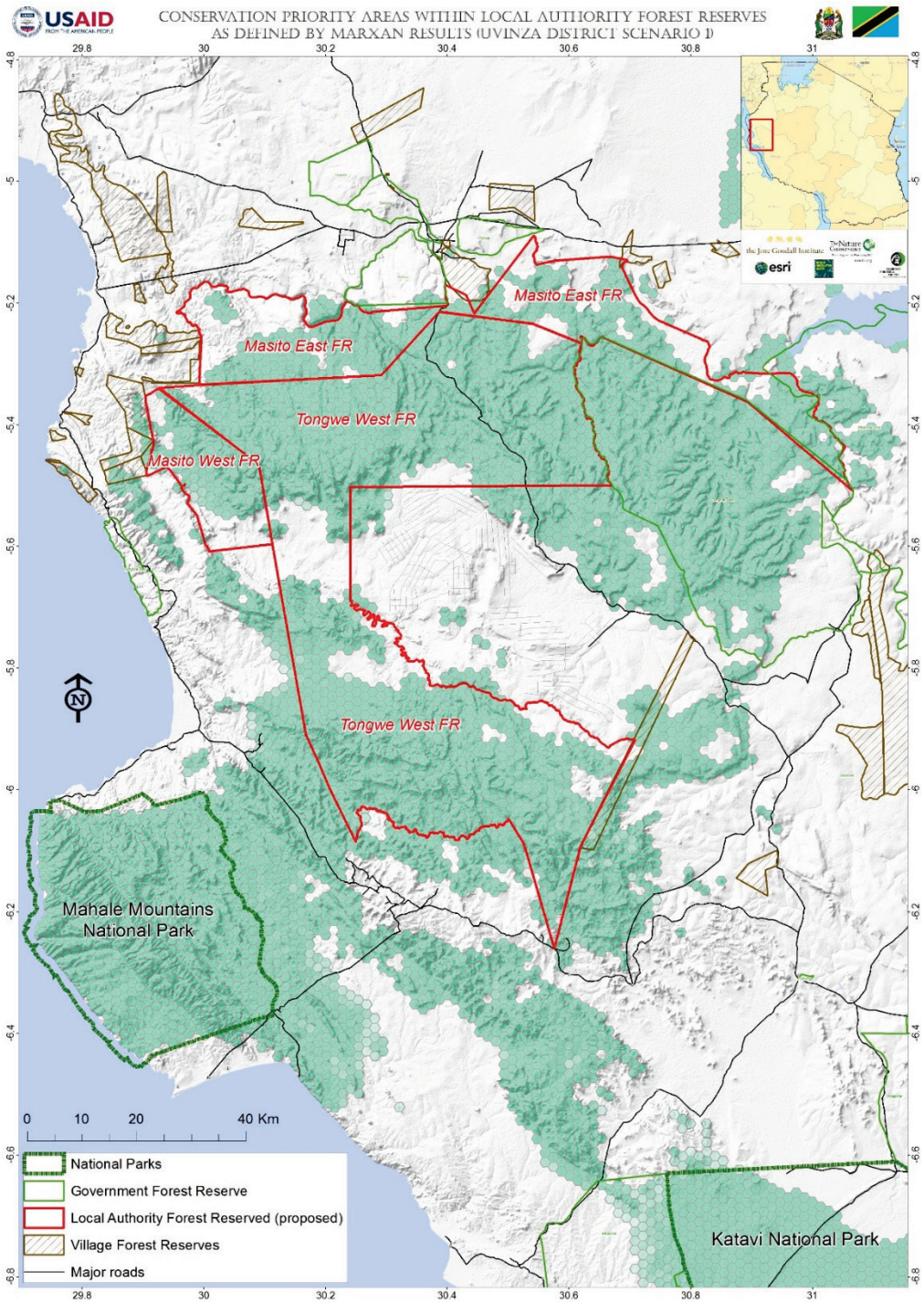


Figure 27. Tanzania's Uvinza District showing a Marxan multi-objective scenario result overlaid with various protected areas (click on map for higher resolution).

H.2: DELIVERING A SPATIAL MONITORING AND REPORTING TOOL (SMART) TO IMPROVE AND REPORT EFFECTIVENESS OF BIODIVERSITY CONSERVATION INVESTMENTS IN CENTRAL AND EAST AFRICA

Collaborators

AWF, JGI, and WCS

Dates

FY 2013–FY 2015

Many African nations have good laws for wildlife and natural resources management but lack adequate on-the-ground enforcement of them. Although numerous factors may contribute to insufficient enforcement, a consistent obstacle is that PA managers do not know enough about the day-to-day activities in their PAs to perceive problems and react appropriately. PA enforcement personnel—park rangers, ecoguards, and the like—monitor a PA and collect data on what they encounter, but the relay of data to managers can be faulty. Paper on which notes are taken can get rained on, for instance, or charts of field observations never get entered into a computer for analysis. PAs invest many financial and staff resources into monitoring, but often it does not pay off in good decision-making.

The present surge in elephant poaching in Africa highlights the system's shortcomings. One PA after another has been unable to counter killing because managers did not learn about the poachers on their grounds until it was too late. Combined with other difficulties African PAs can face, such as lack of capacity and material resources, poor data transmission impairs PAs' ability to protect the continent's priceless natural heritage.

To address this problem, the activities of Task H.2, also called Smart Law Enforcement, advanced development of the Spatial Monitoring and Reporting Tool (SMART) concept. At the heart of the system is a desktop GIS software, named SMART, which the initiative's partners created. The software is free and open-source, so PA can obtain and configure it for the PA's data-collection needs. SMART interfaces with a variety of handheld GPS devices, such as Android phones and CyberTrackers, which too are configured to collect data exactly as needed. Enforcement personnel take the mobile devices with them on patrol and record data directly on them, increasing ease of data collection and reducing the possibility for mistakes. When staff return to headquarters, they download the data directly from their mobile devices to the SMART software. Then managers can analyze the data with SMART to visualize and plan for threats. In addition to SMART's digital component, however, is the training, best practices, and community of users which support PAs in SMART adoption and implementation.

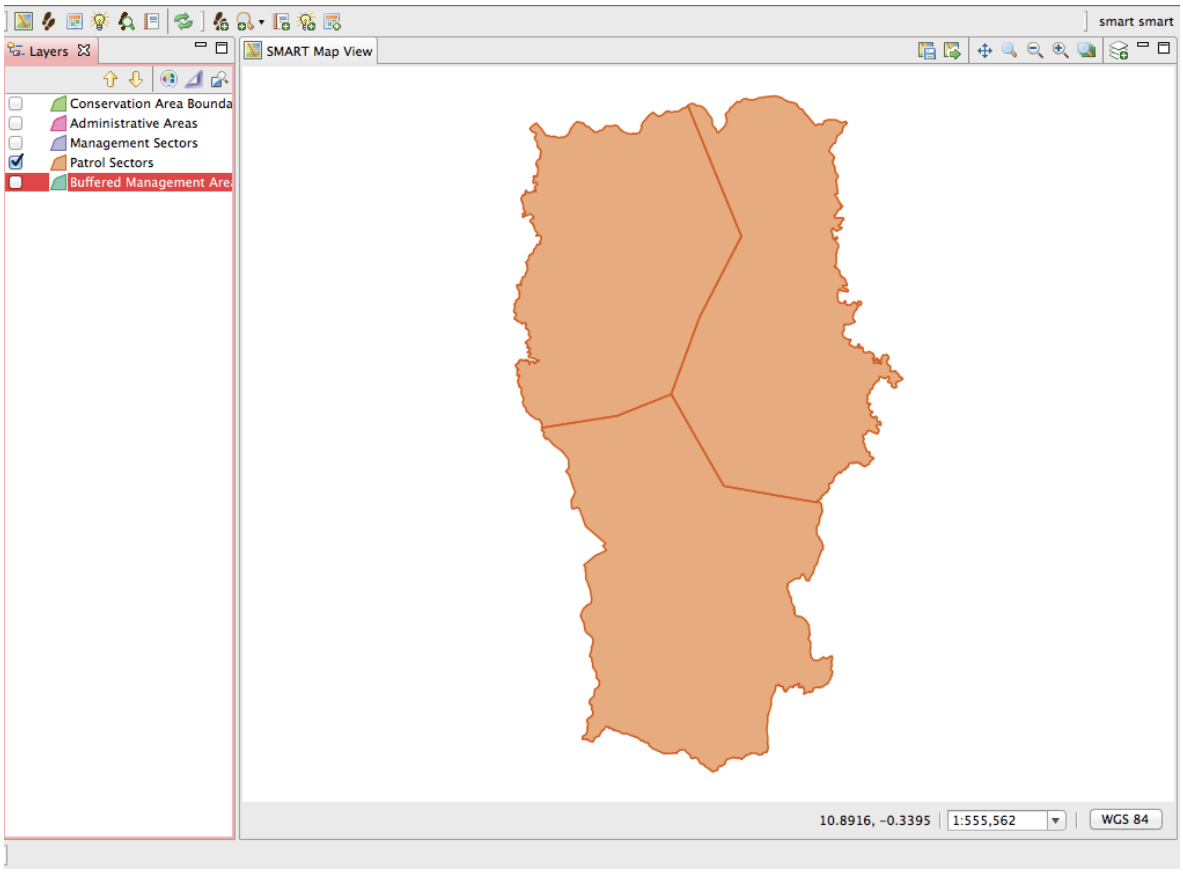


Figure 28. SMART has an extensive tool set for creating custom maps with user-defined colors and labels. Image courtesy of SMART Technical Training Manual 3.0.

Summary of Outputs

In conjunction with ABCG, the SMART Partnership:

- Launched the first public version of SMART 1.0 in February 2013. Two subsequent releases (2.0 and 3.0) addressed end-user concerns identified in field testing;
- Provided SMART 1.0, 2.0, and 3.0 software in French and English;
- Provided updated training materials in both French and English languages for SMART 1.0, 2.0, and 3.0 since 2013;
- Conducted first SMART regional technical training workshops in Africa:
    - SMART Training Report: Regional Technical Training Workshop—Central Africa. The first regional SMART training in Africa, this French-language workshop welcomed 16 SMART administrators and trainers from five countries in Central Africa. March 22–26, 2013. Lopé National Park, Gabon.
    - SMART Training Report: Regional Technical Training Workshop—East Africa. The first regional SMART training in East Africa, this English-language workshop welcomed 29

SMART administrators and trainers from nine countries in East and Southern Africa. May 4–8, 2013. Arusha, Tanzania.

- Provided direct technical support for SMART field testing in five demonstration sites in Africa;
- Arranged leveraged funds and partner technical support for SMART field testing in 15 further demonstration sites in Africa;
- Conducted a regional SMART technical training workshop for 28 SMART implementers and wildlife college directors from 17 African countries, and launched the SMART 3.0 Training Manual: *Technical Training Manual for SMART 3.0*. SMART Implementers and Trainer's Workshop—Final Report. June 16–20, 2014. Hoedspruit, South Africa.

JGI, with additional funding from USAID's Tanzania Mission:

- Organized SMART training for FMs and other natural resource professionals. October 22-24, 2013.
- Conducted "Workshop to Introduce the Forest Monitors to a New Data Collection Form," for forest monitors (FMs) in Katavi Region. 40 local leaders and government members and Gombe-Masito-Ugalla landscape staff attended the workshop. 12 FMs were trained in the use of the mobile technology Open Data Kit with Android tablets and smartphones for field data collection. November 27–28, 2013.
- Purchased a UAV for a SMART program in Tchimpounga Nature Reserve in Republic of Congo. The activity also used a UAV to develop an imagery basemap of the reserve for SMART use, expanding the ability to detect and map threats such as fires and poaching.

Major Impacts

ABCG and other SMART partners have engaged the governments of Gabon, Tanzania, and Uganda to adopt SMART for use in their countries. Gabon's National Parks Agency adopted SMART in 2013 across its entire PA network.

Subsequent training sessions drew participants from additional countries, including Cameroon, the Central African Republic, DRC, Kenya, Madagascar, Mozambique, Nigeria, Republic of Congo, Rwanda, South Sudan, and Uganda. The attendees represented conservation NGOs, educational institutions, and government agencies charged with wildlife and protected area management.

ABCG supported SMART activities in Gabon (all 13 National Parks and other protected areas will implement SMART; Nigeria (Yankari Game Reserve, the Cross River National Park, Mbe Mountains Community Reserve, and Afi Mountain Wildlife Sanctuary); Cameroon (Dja Faunal Reserve); DRC (Lomako Yokokala Faunal Reserve, Tshuapa-Lomani-Lualaba, Virunga Park, and Iyondji Community Bonobo Reserve); Senegal (Niokolo Koba National Park); Kenya (Kenya Wildlife Service and AWF Landscapes); Congo (Tchimpunga Nature Reserve, Congo). In addition, the SMART Program leveraged further funds to support more demonstration sites in: DRC, Congo, Tanzania, Mozambique, Uganda, and Madagascar.

Figure 29. *From the Ground to the Cloud: Transforming Chimpanzee Conservation with High-Tech Tools*. A selection of JGI field staff and rangers have attended training in SMART. Video courtesy of JGI: https://www.youtube.com/watch?v=CNXv8EEs0P8.

Recommendations for Future Action

SMART is fast becoming the tool of choice for PA management data. Based on the rapid uptake by PA staff and on feedback from users in the field, the SMART task team has identified two main actions for the immediate future.

The first goal is to institutionalize training and implementation support in Africa to ensure SMART's sustainability. The first training course at the Southern African Wildlife College paved the way for discussions to introduce SMART into the standard curriculum for PA managers. To that end, SMART members plan to engage similar training institutions and agencies across Central and East Africa in teaching SMART.

The second goal is to increase SMART's effectiveness as a law enforcement and management tool through the development of SMART Connect. This connectivity plug-in and interface will enable personnel in the field to send data remotely from their handheld devices to the SMART desktop software back at headquarters, empowering managers to respond more quickly to on-the-ground conditions. SMART Connect also will permit the integration of different data streams and applications, thus improving its value as a PA information management platform. A beta version of SMART Connect should become available for testing in October 2015.

Figure 30. Open Data Kit training in Tchimpounga, Republic of the Congo. Photo courtesy of JGI.

H.3: ADDRESSING CHALLENGES IN COASTAL CONSERVATION IN THE WESTERN INDIAN OCEAN

Collaborators

TNC, WCS, and WWF

Dates

FY 2012–FY 2015

The Western Indian Ocean (WIO) region presents challenges that are different from other regions with similar characteristics of development pressure, pollution and degradation, and climate change. Individual countries have tended to focus on national priorities for coastal management, rather than prioritizing regional partnerships and coordination of marine and coastal conservation goals. In addition, many regional initiatives have not been adequately linked to national priorities and processes, and as a result have had difficulty in sustaining their actions over the long term. Thus integrated management of coastal and marine resources has been identified as a common concern for all the southwest islands of the Indian Ocean and the coastal countries of East Africa. However, given the general weakness of environmental governance in the region, WIO Governments have been supported in developing a common vision and strategies to address these cross-cutting challenges. This sub-theme is entitled alternatively as *Western Indian Ocean*.

Summary of Outputs

ABCG members provided technical input through activities including:

- Launched the Western Indian Ocean Coastal Challenge, an initiative mobilizing national- and regional-level commitment of the WIO's nations to address shared natural resources management issues, with a focus on climate resilience. ABCG-funded activities included a stocktaking exercise to assess knowledge, gaps, and opportunities for WIO marine and coastal resources conservation and management.
- Assisted in drafting the first Regional Workshop of the Western Indian Ocean Coastal Challenge Platform (WIO-CC) workshop agenda and facilitation of the workshop.
- Participated in the *Meeting of the Consortium for Conservation of Coastal and Marine Ecosystems in Western Indian Ocean (WIO-C)*, discussing operational including planning and implementation of joint activities.
- ABCG members participated in the second and third technical workshops of the WIOCC and facilitated the participation of WIO-CC national technical focal points from Kenya and Mozambique.
- Other support included travel of the WIO-CC technical coordinator to Tanzania/Zanzibar with the aim of enabling the planning of Tanzania and Zanzibar to commit to joining the official launch of the WIO-CC; ABCG also supported travel of Government representatives from Kenya, Mozambique and Tanzania to attend the 4th technical meeting of the WIO-CC with the purpose of exchanging experiences and raising awareness.

- ABCG members participated in the plenary sessions of the Nairobi Convention Conference of Parties (COP7) presenting the results of the USAID/BATS—ABCG-funded *Climate Change in the Western Indian Ocean: A Situation Assessment and Policy Considerations*.
- ABCG led the development of the conceptual framework for a sustainable funding (conservation trust fund) mechanism to support marine and coastal conservation efforts with the WIO-CC.
- As part of a series of national commitments announced at the launch of the WIO-CC, ABCG members have embarked on supporting the Government of Seychelles to expand its Marine Protected Area, with a draft zoning proposal, presented at stakeholder meetings and workshops.

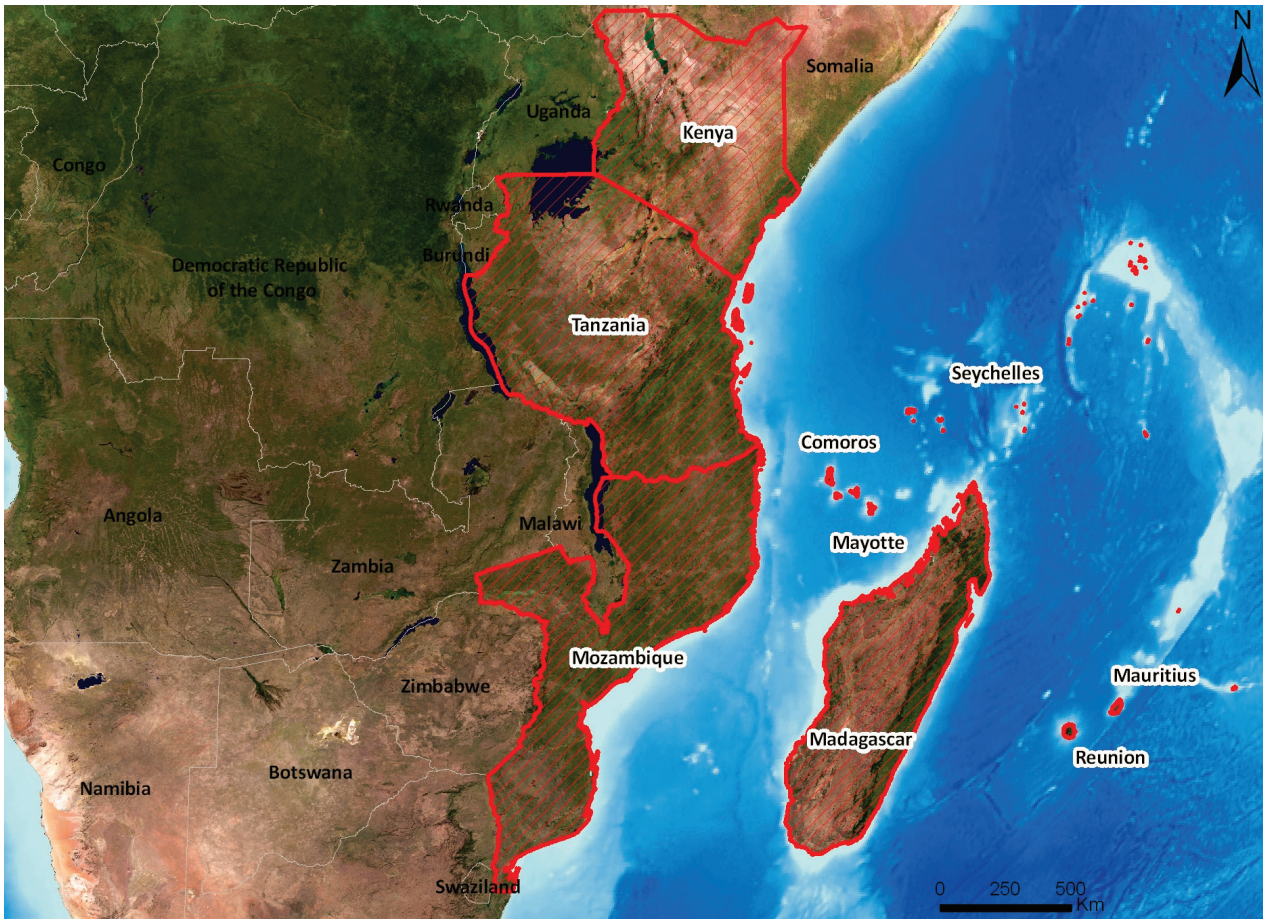


Figure 31. The Western Indian Ocean countries of Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and Tanzania, 2012.

Major Impacts

Coastal communities and marine ecosystems are arguably the most vulnerable to climate change. It is therefore imperative to take steps in resolving coastal marine conservation issues with an organized, collaborative approach. Commitments ought to take a multi-national and regional scope, and involve national-level government agencies if any substantial impact is to be realized. To this effect, the WIO

regional nations and their partners, including WCS, WWF, CI and TNC, launched the *Western Indian Ocean Coastal Challenge* (WIO-CC) in September 2014 as a "call to action" focused on integrated marine and coastal management that builds on the efforts of the Nairobi Convention, WIO/LAB Strategic Plan, and the Indian Ocean Commission's efforts. The actions include public pledges by relevant governments "*…to promote actions for climate-resilient development that encourage effective conservation of biodiversity, enhanced livelihoods and economies for greater social security among coastal communities*" (Western Indian Ocean Coastal Challenge, 2015).

Table 4. Vulnerabilities

	Coastal lands	Mangroves	Coral reefs	Agriculture	Food security	Health
Comoros	High	High	High	High	High	High
Kenya	High	Medium	High in some areas	High	High	Medium
Madagascar	High	High in some areas	High in some areas	High	High in some areas	High
Mauritius	Medium	High	Medium	Medium	Low	Medium
Mozambique	High	Medium	High	High	High	High
Seychelles	High	Low	Medium	Medium	Medium	Medium
Tanzania	High	Medium	High in some areas	High	High	High

ABCG has played a pivotal role in identifying technical and policy knowledge gaps crucial in fostering cooperation and understanding at the highest organizational levels. WCS and WWF published a report entitled *Climate Change in the Western Indian Ocean: A Situation Assessment and Policy Considerations* that took stock of gaps, opportunities and lessons learned of strategic importance for marine and coastal resources conservation and management, including climate vulnerability and adaptation, in the WIO. TNC, along with WCS and WWF have worked together to operationalize WIO-CC by supporting Kenya, Tanzania and Mozambique in 2013. This includes a WIO-CC communications strategy and fundraising plan.

TNC played a key part in facilitating the marine spatial planning (MSP) workshop for the Government of the Seychelles, in an effort to expand its marine protected area. An MSP workshop outcome in 2014 included important integration with ongoing United Nations Development Program-Global Environment Facility (UNDP–GEF) projects and expansion of the scope of TNC's planning work to include the interests of commercial and local fisheries, oil and gas development, marine transportation, tourism and biodiversity conservation. The plan was ultimately approved by the Seychelles Cabinet of Ministers.

In an effort to foster a self-sustaining mission, WCS supported the development of a Conservation Trust Fund, a sustainable finance and resource mobilization mechanism for the WIO-CC by leading in a feasibility study entitled *Developing a Conservation Trust Fund For the Western Indian Ocean Coastal Challenge (WIO-CC)*.

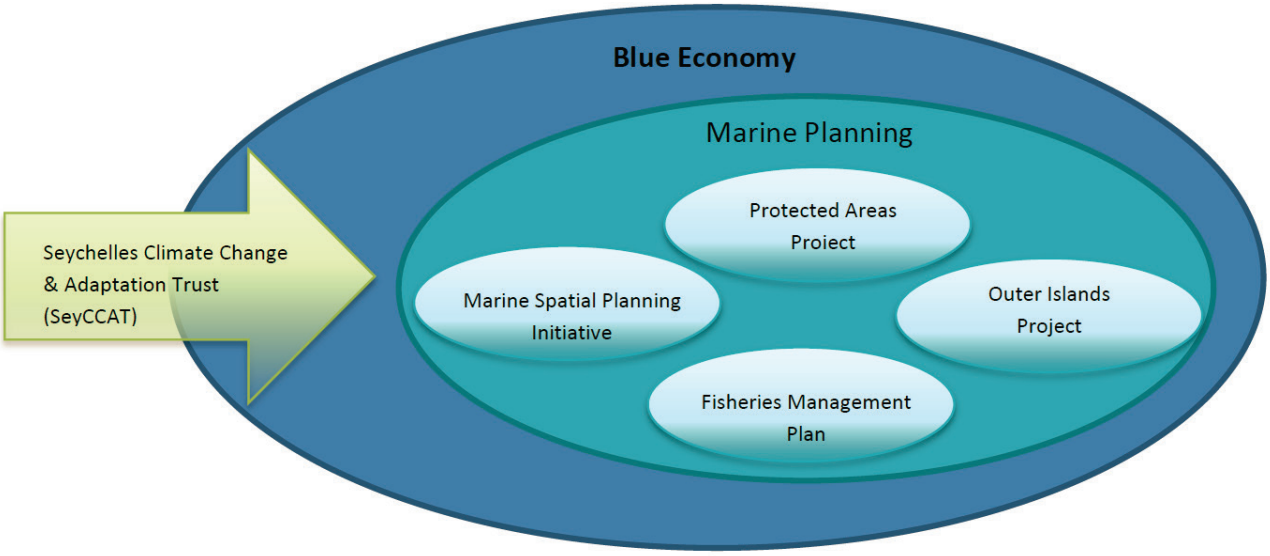


Figure 32. The Seychelles Marine Spatial Planning Initiative in relation to the Blue Economy and other planning or management projects in the Seychelles. Not all projects are represented in the diagram.

H.4: FAITH & CONSERVATION IN AFRICA

Collaborators ***Dates***

JGI, WWF, and Alliance of Religions and Conservation (ARC) *FY 2010–FY 2015*

Faith communities in Africa have the potential to be powerful partners for conservation. To successfully engage people, conservation programs cannot rely on a purely technical approach, as it overlooks the values that underlie resource use decisions. In that vein, each religion has traditions for relating to and caring for the natural world, laying a foundation for adherents' interactions with the environment. More than 95 percent of people in sub-Saharan Africa identify with a religious group. Faith-based organizations constitute the largest sector of African civil society, and in rural areas are often the only organizations. Religious groups also are involved in establishing, contributing to, and/or running many schools, so can reach Africans in educational contexts. Finally, faith groups are committed to their communities for the long-term, exceeding the short-term scale of many conventional environmental projects.

Figure 33. The Alliance of Religions and Conservation (ARC) and Kenya Organisation for Environmental Education (KOEE) resource development and training workshop in Nairobi, Kenya. Photo courtesy of ARC.

Summary of Outputs

ABCG's Task H.4 partners generally worked in several broad areas.

- *From Practice to Policy to Practice: Connecting Faith and Conservation in Africa*. White paper exploring practices connecting faith and conservation, providing information on faith groups doing conservation work, and presenting case studies on faith-based conservation. Amy Gambrill. 2011.

Building ABCG members' and conservation partners' relationships with African faith communities.

- Many Heavens, One Earth, Our Continent: African Faith Commitments for a Living Planet. Conference organized by ARC and the All Africa Conference of Churches. Nearly 100 participants celebrated the launch of long-term plans to protect the environment by 27 Christian, Muslim, and Hindu groups from 11 African countries. Nairobi, Kenya, September 18–20, 2012.
    - WWF, WWF-Kenya, and Kenya Wildlife Service session for faith leaders on wildlife trafficking crisis, culminating in leaders' signing statements against wildlife trafficking.
    - WWF and WWF-Kenya safari tour of Nairobi National Park for faith leaders, with prayer session at ivory-burn site for animal and human lives lost to poaching.
    - JGI session on environmental education in Tanzanian and Ugandan Muslim schools.
- WWF engagement of Kenya Conference of Catholic Bishops:
    - Pastoral coordinators workshop on wildlife trafficking. September 2–7, 2013.
    - Conservation-themed events to highlight Catholic Day of the Environment. October 4, 2013.
- JGI-Uganda activities educating about forest conservation and human-wildlife coexistence:
    - Performed children's education activities and distributed educational materials at annual youth camp of Anglican Bunyoro Kitara Diocese. January 2014.
    - Signed memorandum of understanding (MOU) with Catholic Diocese of Fort Portal for children's environmental education in Lake Nkuruba Nature Reserve. February 2014.
    - Conducted educational outreach in eight villages through the Bulindi Public Awareness Campaign Project in cooperation with the Bulindi Catholic Church of the Catholic Diocese of Hoima, reaching ~1,500 households. May 2013–April 2014.

Integrating conservation into faith-based education.

- Faith-Based Education for Sustainable Development (ESD) Teacher's Toolkit. Guidebook by ARC and Kenya Organization of Environmental Education (KOEE), with content contributions from WWF. The first of its kind in sub-Saharan Africa, instructs teachers on integrating faith-value-based environmental education into existing primary-school curricula. Launch event and workshop held in Nairobi, July 17, 2013.
- Tanzania faith-based ESD workshop and teacher's toolkit launch. Organized by ARC, KOEE, and JGI-Tanzania. Dar es Salaam, September 19–20, 2013.
- JGI-Tanzania collaboration with teachers of Muslim schools to update manual incorporating environmental education content into Islamic curriculum. FY 2013.
- Faith-Based Environmental Education Stakeholders' Workshop. Workshop and toolkit launch organized by ARC and JGI with Uganda Faiths Network on Environmental Action (UFNEA) and KOEE. March 24–25, 2014. Kampala, Uganda.

Engaging Chinese faith leaders on trafficking of African wildlife.

- Wildlife trafficking conversation between African and Chinese faith leaders at Green Pilgrimage Network Meeting. July 2013, Trondheim, Norway.
- Visit by Chinese Taoist freelance journalist Jin Li to Uganda and Kenya to cover wildlife trafficking and other sustainable development issues. October 2014.

Figure 34. Prayer circle around Ivory burning site in Nairobi National Park. Photo courtesy of James Morgan /WWF-US.

Major Impacts

The September 2012 Many Heavens, One Earth conference yielded positive outcomes. WWF's work on wildlife trafficking with the Kenya Conference of Catholic Bishops in FY 2013 grew out of interest built and relationships made at WWF's wildlife trafficking session at the conference. It also yielded two books which faith groups can use in creating their own environmental action plans, *Many Heavens One Earth Our Continent: African Faith Commitments for a Living Planet* and *Many Heavens One Earth in Action*.

The task's faith and education activities have had ripple effects as well. Educators and faith leaders from Tanzania and Uganda who attended the launch events and/or workshops for the KOEE and ARC *Faith-Based Education for Sustainable Development Teacher's Toolkit* in Kenya and Tanzania, respectively, helped introduce the toolkit in their own countries. Going a step further, Ugandan faith leaders who had attended the Tanzania launch created the Uganda Faiths Network on Environment Action, which

was pivotal in organizing the 2014 toolkit workshop and launch in Uganda. The toolkit also catalyzed action on the part of in-country event attendees. The Tanzania toolkit spurred the National Muslim Council of Tanzania to develop a new strategy for environmental education. And Terezya Huvisa, Tanzania's Minister of State for Environment and then-President of the African Ministerial Conference on the Environment (AMCEN), presented the toolkit and *Many Heavens, One Earth in Action: Stories of African Faith Commitments* (above) at the October 2013 AMCEN meeting. As a result, the United Nations Environment Programme's Regional Office for Africa, which hosts the AMCEN Secretariat, developed a proposal for African countries' adoption of faith-based ESD. In addition, ARC and KOEE exhibited the toolkit at the November 2014 United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Conference on Education for Sustainable Development in Aichi-Nagoya, Japan, where the toolkit was honored as one of the five best examples of sustainable development education from Africa. Annual event, will continue participating every year. JGI-Uganda's participation at the Anglican Bunyoro Kitara Diocesan annual youth camp in January 2014 was so successful that the organization plans to continue the activity for the foreseeable future; the organization is also signing an MOU to collaborate with the diocese on environmental education.

Task H.4 activities also laid groundwork for engaging Chinese faith leaders on the trafficking of African wildlife. Inspired by the wildlife trafficking discussions at the "Many Heavens, One Earth" conference, ARC Secretary General Martin Palmer gathered Christian and Muslim faith leaders from Kenya, Nigeria, Tanzania, and Uganda with Taoist and Confucianist faith leaders from China at ARC's Green Pilgrimage Network Meeting in July 2013 in Trondheim, Norway, to discuss illegal wildlife trade, especially the Chinese market for ivory and rhino horn, and the need to educate Chinese audiences on the topic. The leaders agreed to develop joint messaging and public service announcements, and the Taoists resolved to conduct outreach to Chinese workers in Kenya. Following the meeting, Taoist masters began writing articles against wildlife trafficking in Chinese newspapers and magazines. For example, the article "Taoists Protect Lives," by Master Jiyu Zhang—descendent of the founder of Taoism, Celestial Master Daoling Zhang, and former vice president of the Chinese Taoist Association—appeared in *China Taoism*, the most authoritative Taoist magazine in China, on October 27, 2014. Speaking against wildlife trafficking, the article's three subtitles are, "Taoist contribution to traditional Chinese medicine," "Taoism calls its followers to protect all lives," and, "It is our responsibility to develop traditional Chinese medicine as well as protect wildlife." Because traditional Chinese medicine has its roots in Taoism, these statements from the faith's leadership carry moral authority. In April 2014, at the Taoists' Ecological Temple Workshop in Ziyang, China, a panel on wildlife and wildlife trafficking took place which was an outgrowth of the ARC-facilitated conversation in Trondheim. After the conference, organizers released the Ziyang Declaration to strengthen the Taoist position against wildlife trafficking and the use of endangered species in traditional Chinese medicine. Due to lack of funds, however, the Taoists could not fly African religious leaders to the conference. Another outgrowth of the Trondheim encounter was the October 2014 visit of Chinese Taoist freelance journalist Jin Li to Uganda and Kenya to learn about wildlife trafficking and other sustainable development issues. ARC partnered with Xinhua, the official press agency of the People's Republic of China, to cover Ms. Li's visit in Chinese and English. After her return, she reported on her visit at workshops of the China Taoist Association. The next step of this relationship is for African religious leaders to visit Hangzhou, China, tentatively planned for 2017.

Recommendations for Future Action

Future faith and conservation efforts could keep up the momentum from the ESD toolkit. In Uganda, JGI-Uganda arranged for a curriculum expert to review the toolkit and recommend ways to tailor it to the country's context. Those revisions are underway, with a view to obtaining the Ugandan government's approval for the toolkit to be used in any school in the country. In Kenya, KOEE is developing trainer-of-trainer ESD guides for informal education, such as at youth groups and Sunday schools. JGI-Tanzania could continue training teachers to use the toolkit and equipping schools to demonstrate the toolkit's environmental projects, such as rainwater harvesting. To further the toolkit's distribution, it must be translated into Swahili and printed in booklet format. There is also interest in spreading the toolkit to other countries: enthusiastic faith education representatives from Ghana and Rwanda attended the Uganda launch, and a network of schools, educators, and faith leaders is ready to launch the toolkit in Ghana.

In addition, Kenya's Catholic Church leadership—inspired by its two previous faith leader wildlife trainings with WWF—wishes to develop a wildlife awareness campaign for congregants. A particular goal is to spread a faith-consistent conservation ethos in parishes affected by elephant poaching and human-elephant conflict. Using the institution's network of community groups, schools, media, and more, the church could be an effective educator about conservation in the country.

Thursday, November 13, 2014

NEWS OF THE World

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Chinese lobby joins fight against poaching in East African states

BY PHILIP ETYANG

A Chinese NGO has joined the fight against illegal poaching of wildlife for ivory in Africa.

The China Daoist Association last month sent a member to notorious poaching hotspots in Uganda and Kenya to witness first-hand the effects of poaching.

The trip comes against the backdrop of recent reports making headlines that thousands of kilogrammes of ivory had been smuggled into China from Tanzania during President Xi Jinping's State visit to the East African country in March last year.

But the allegations have been vehemently refuted by both the Tanzanian and Chinese governments.

The allegations were made through a report released last month by the Environmental Investigation Agency where members of Xi's entourage were accused of smuggling the ivory to China using diplomatic bags and ferried by the presidential plane. The entourage included businessmen and senior government officials.

Li Jin, 29, a devout Daoist, spent two weeks on a mission to Ngogo Kibale National Park in Uganda, and Tsavo East and West national parks in Kenya where she spoke to local communities at poaching sites as well as conservationists about the menace and its effects.

Speaking to a *China Daily* correspondent in Nairobi, Ms Li said when she returns to China, she intends to spread awareness on the effects of poaching in East Africa.

FIRST-HAND EXPERIENCE

"In China, there is no predominant religion as in many other countries. Nevertheless, religious beliefs and ideals inform a lot of behaviour and what happens in everyday life. Taoism is one of the most important of these. So when I go back to China I need to teach people to appreciate the importance of balance and harmony between humans and wild animals," she said.

According to the association's Director of Programmes in China, Claudia He, Li's visit to the two countries was to enable her witness first-hand the effects of poaching.

"Ms Li's activities in the two countries included but were not limited to visiting elephant and other poaching sites to speak with rangers and conservationists to understand their needs and experiences," she said.

Figure 35. The China Taoist Association partnered with ARC in speaking out against wildlife trafficking (Etyang, 2014).

H.5: BUSHMEAT IN EASTERN AFRICA

Collaborators

ABCG Coordinator, College of African Wildlife Management, and Bushmeat Crisis Task Force.

Dates

FY 2008–FY 2010

Commercial, illegal, and unregulated hunting for bushmeat—the meat of wild animals—is causing widespread local extinctions in Africa. People have eaten wildlife for millennia, and bushmeat remains an important food source for subsistence rural African communities. The commerce in African bushmeat to sell in far-flung, even international, locales, however, has become unsustainable, especially when combined with other growing threats to wildlife such as rising human populations and habitat loss and fragmentation. Lying at the nexus of ecology, human nutrition, economics, and culture, the conservation issues surrounding bushmeat trade require a multi-faceted approach.

The earliest bushmeat conservation initiatives had targeted West and Central Africa. Recognizing that bushmeat trade was also a problem in East Africa, ABCG embarked on Task H.5 (which began in FY 2008 under Task E) to meet this need.

Figure 36. Bushmeat hawking in Equatorial Guinea. Photo courtesy of Heidi Ruffler.

Summary of Outputs

- Recruited experts to assist the College of African Wildlife Management (CAWM) in Mweka, Tanzania, and the U.S. Fish and Wildlife Service (USFWS) in developing the MENTOR/BEAN Fellowship Program. USFWS MENTOR (Mentoring for ENvironmental Training in Outreach and Resource conservation) programs provide academic and field-based training for emerging African conservation leaders to act on major threats to wildlife; the BEAN (Bushmeat-free

Eastern Africa Network) Fellowship focused on bushmeat trade in East Africa. MENTOR/BEAN trained eight fellows from four countries. Mweka, Tanzania. 2008–2009.

- Created three teaching modules for MENTOR/BEAN. March and July 2008. (ABCG FY 2008 Annual Report, Appendices 2–4, pp24–41.)
- Building Capacity and Networks for Bushmeat Solutions. Event for conservationists from Africa and the United States to learn about MENTOR/BEAN, meet MENTOR fellows, participate in the launch of BEAN, and celebrate the Bushmeat Crisis Task Force's 10 years of accomplishments. Washington, DC. June 23, 2009.
- Bushmeat in Eastern and Central Africa. Presentations on addressing bushmeat trade around Tsavo National Park, Kenya, and in the Dzanga-Sangha Project, Central African Republic. Washington, DC. November 19, 2009.
- Alternatives, Enforcement and Capacity-Building: Examples of Key Solutions to Bushmeat Challenges. Briefing to share developments in bushmeat-related projects in Africa, to learn about policy and law enforcement impacts of bushmeat in the U.S., and to discuss priorities and strategies for engaging stakeholders and decision-makers in addressing the bushmeat crisis. Washington, DC. January 29, 2010.

Major Impacts

After finishing their fellowship program, the MENTOR/BEAN fellows have continued contributing to bushmeat conservation. They augmented the state of knowledge on bushmeat conservation by conducting national and site-level bushmeat surveys in their home countries. Their findings have been shared through factsheets (ABCG FY 2009 Annual Report, p.32) and in venues such as the "Unsustainable Bushmeat Trade in Eastern Africa" symposium of the Society for Conservation Biology's Africa Section Meeting in Ghana in January 2009, attended by more than 70 African conservation biologists (ABCG FY 2009 Annual Report, p.31) The fellows also gave their fellowship an extended life in the form of the Bushmeat-free Eastern Africa Network, an interdisciplinary and multi-institutional network consisting of wildlife professionals, human development experts, government representatives, and academic experts, with the goal of engaging private industry personnel, local community leaders, and citizens in implementing grassroots solutions that directly address bushmeat exploitation in and around protected areas in Eastern Africa.

Figure 37. Bushmeat nutrition. Photo courtesy of Chris Golden.

H.6: ENVIRONMENTAL IMPACT OF EMERGING INFECTIOUS DISEASES IN AFRICA

Collaborators

ABCG Coordinator and Consultant

Dates

FY 2008–FY 2010

More than 60% of emerging infectious diseases (EID) are zoonotic (Jones et al., 2008), meaning they can be passed between animals and humans. Growing human populations and associated environmental pressures are bringing livestock, wildlife, and people into increasing proximity, escalating the possibility for disease transmission, including the emergence of new diseases. African nations must prepare for the growing threat and potential impacts of emerging infectious diseases on conservation and natural resource management. To help the conservation community understand and prepare for emerging infectious diseases, ABCG collaborated with partners in West and East Africa.

Summary of Outputs

ABCG has conducted analysis and outreach with key partners in West and East Africa in an effort to support conservation practitioners with the right tools to tackle zoonotic diseases. ABCG thus hired a consultant to conduct an assessment of what the conservation threats and opportunities are, generating output including:

- A week-long training module on *Emerging Infectious Diseases and Conservation* for post-graduate students at the College of African Wildlife Management, Tanzania;
- An ABCG thematic meeting entitled "Emerging Infectious Diseases in Africa: What Can the Conservation Community Do to Prepare?" was organized to share findings with a cross-sectoral audience.
- A thematic meeting was organized by ABCG, titled Emerging Infectious Disease, with presentations focusing on environmental impacts, human-livestock-wildlife interface, and prevention and control of emerging infectious disease;
- Further, ABCG produced a factsheet for African conservation partners for preparedness on the environmental impacts of emerging infectious diseases, entitled *Emerging Infectious Diseases, Zoonoses & the Human-Livestock-Wildlife Health Interface: A Primer for Conservationists*.

Major Impacts

With the outbreak of EIDs such as avian influenza in 2005, ABCG embarked on understanding and preparing the conservation community for EIDs threatening conservation and development goals. ABCGs output included a thematic meeting in Washington, DC entitled "Emerging Infectious Diseases in Africa: What Can the Conservation Community Do to Prepare?," attended by 25 participants from conservation NGOs and U.S. Government agencies. A primer entitled *Emerging Infectious Disease, Zoonoses and the Human-Livestock-Wildlife Health Interface: A Primer for Conservationists* was produced in 2009.

Figure 38. Newcastle disease vaccination outreach. Photo courtesy of Iregi Mwenja.

H.7: PRIVATE SECTOR ALLIANCES AND CONSERVATION

Collaborators	*Dates*
AWF, CI, JGI, WCS, and WWF	*FY 2008–FY 2010*

A practical way for NGOs to conduct conservation is to partner with the private sector in activities which both foster conservation outcomes and economic development. Such activities also complement the community-based conservation approach by leveraging the same private-sector partner. ABCG members have shared their experiences and best practices as a peer-learning opportunity.

ABCG's early output included a case study to share lessons learned by the conservation NGO in partnership with the private-sector for biodiversity conservation in a buffer zone abutting the Nouabalé-Ndoki National Park on working with the logging industry to mitigate impacts of logging. It examined the necessary elements for building successful private-sector partnerships for conservation that encourage sustainable resource use and biodiversity conservation. Lessons learned and best practices drafted by the case study were subsequently incorporated into post-graduate studies at the College of African Wildlife Management, Tanzania.

Summary of Outputs

ABCG member AWF has conducted case studies demonstrating their experiences in dealing with the private sector on ranching and on ecotourism. They shared best practices and lessons from these experiences by teaching students at the College of African Wildlife Management. With a report entitled *Using Private Sector Alliances to Address Drivers of the Bushmeat Trade: Experience from AWF*, AWF presented three case studies illustrating how conservation enterprise needs to be effective in address the drivers of illegal or unsustainable wildlife use.

ABCG organized a thematic meeting on May 6, 2010 reaching a broad cross-disciplinary audience, and resulting in conclusions and recommendations on private sector partnerships to address conservation challenges and seizing opportunities, as well as:

- *Are partnerships the key to conserving Africa's biodiversity?* A presentation on sharing lessons learned from partnerships with private sector companies 2010, Rowena Smuts.
- Identifying necessary elements for positive partnership with strong conservation outcomes
- Learning about the various roles that should be played by industry, community, government and conservation stakeholders.
- *Building Private-sector Partnerships for Conservation (PSPCs): Lessons learned from the Buffer Zone Project in Northern Congo*. A presentation on building partnership with the private sector—specifically the extractives industry—to forge mutually beneficial and ecologically sound development activities. 2010. John Poulsen.

Major Impacts

ABCG started with a look at private sector partnership case studies compiled by the African Wildlife Foundation on their experiences in dealing with the private sector on ranching and ecotourism. Through their report entitled *Using Private Sector Alliances to Address Drivers of the Bushmeat Trade: Experience from AWF*, AWF found that certain critical factors for success must exist for conservation enterprise to be effective in meeting conservation goals: The enterprise must have a champion who demonstrates strong leadership and links tangible enterprise goals to include conservation outcomes. There must be strong local institutions to support the enterprise and implement complementary conservation and enterprise strategies. Strong technical support from an NGO must exist to facilitate capacity building. The enterprise should also have a comparative advantage required to deliver high value benefits, and be become financially self-sufficient.

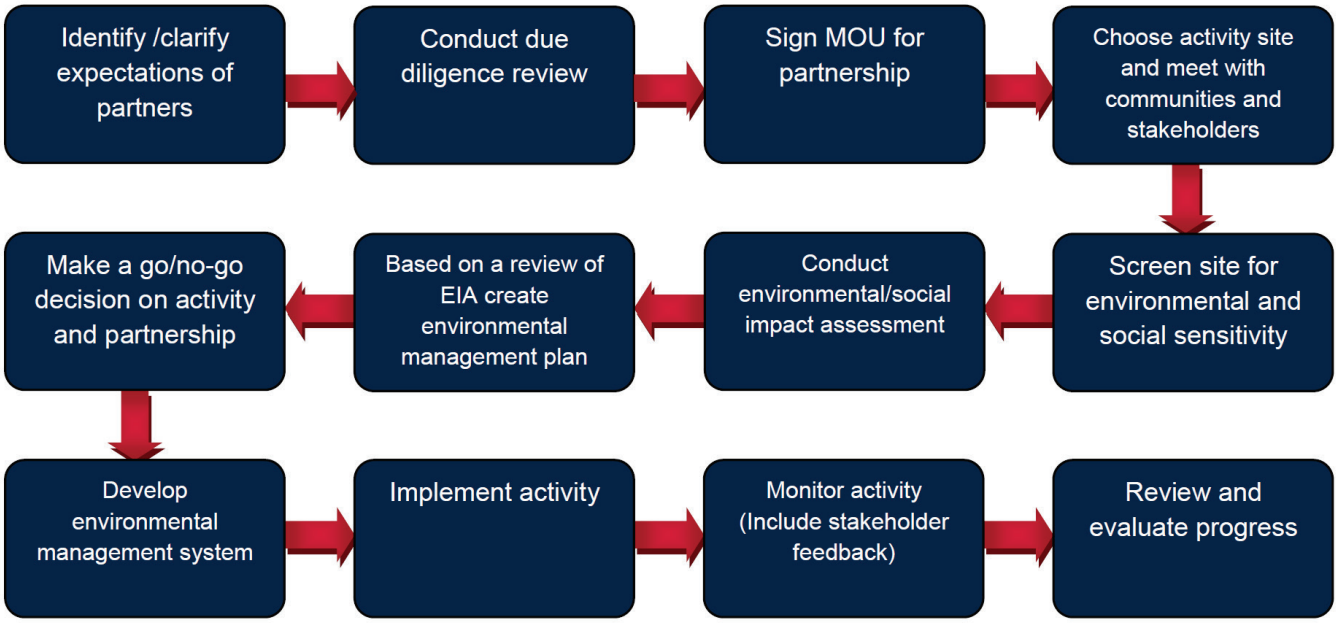

Figure 39. Steps in Developing an Extractive Industries Conservation Partnership (Queiroz, App, Morin, & Rice, 2008).

In 2010 ABCG supported the production of a comprehensive report arguing that private sector partnerships such as with the extractive mining industry can contribute towards conserving biodiversity in Africa. Entitled *Are partnerships the key to conserving Africa's biodiversity?*, Conservation International portrayed four case studies of partnership between mining companies and conservation NGOs, and confirmed that success hinges on multiple stakeholder engagement including civil society and government agencies in addition to private enterprise and NGOs.

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Appendix

SUCCESS STORIES

Always seeking to effect change through communicating, collaborating, and generating knowledge, ABCG has produced several projects resulting in noteworthy outcomes and outputs, a selection of which are featured here.

"Many Heavens, One Earth, Our Continent"
African Faith Leaders Launch Conservation Commitments

Faiths guide and direct the way we think, behave, and live our lives. But the power of faith is not solely spiritual. Collectively, faith-related institutions own almost 8 percent of total habitable land surface and constitute the world's third largest category of financial investors. Their determination to address climate change or to protect wildlife has enormous potential to influence the fate of natural spaces and species.

WWF Sacred Earth program

With funding from USAID's Biodiversity Analysis and Technical Support (BATS) program of the Bureau for Africa, the Africa Biodiversity Collaborative Group supports engagement with faith communities on conservation. Through this initiative, ABCG works with its members the Jane Goodall Institute and World Wildlife Fund-US, as well as the UK-based Alliance of Religions and Conservation (ARC).

Figure 40. Christian, Muslim and Hindu faith leaders pray for protection of wildlife and park rangers at the site of the 1989 ivory burn at Nairobi National Park © J.Morgan/ WWF.

From September 18 to 20, 2012, ARC hosted the *Many Heavens, One Earth, Our Continent: African Faith Commitments for a Living Planet* conference during which faith groups from throughout sub-Saharan Africa launched their long-term plans for conservation. These plans are compiled in a volume of the same title. During the workshop, nearly 100 participants gathered at the All Africa Conference of Churches Archbishop Desmond Tutu Ecumenical Centre in Nairobi, Kenya, for three days of celebrating the conservation plans, as well as for discussions about engaging faith communities, developing partnerships, sustainable agriculture, education, tree planting, the role of women, and illegal wildlife trade.

Celebration and storytelling were important components of the conference. Martin Palmer, Secretary General of ARC emphasized the importance of celebration in all faith traditions, and so the conference began with joyous recognition of the work and commitments of each faith group. Guest speakers included the president of the All Africa Conference of Churches, the acting ambassador of Norway to Kenya, the UNEP Africa Region permanent secretary and school children from Muslim and Christian eco-schools in Nairobi. Tree seedlings were blessed with Muslim, Christian, and Hindu prayers and were presented to Kenyan leaders at the conference.

The plans focus on faith-based responses to the issues of agriculture practice, sustainable use of land and water and education on the environment in faith schools. They include:

Tree planting and agroforestry are important parts of many faith plans. For example, the Evangelical Lutheran Church in Tanzania intends to set up 26 tree nurseries training over 200 women in tree nursery establishment, tree planting and agroforestry.

Many faiths have strong commitments to sustainable agriculture. One of these, the Abaja Ba Kristo (the Servants of Christ) agro-pastoral centre, run by a women's religious congregation in Karongi Region, Rwanda, proposes expanding its farmer training in sustainable agriculture.

Water, sanitation, and hygiene (WASH) projects are also very important to many faith groups, as is environmental education from a faith perspective. ARC is working with the Kenyan Organization for Environmental Education and other faith groups to development an education for sustainable development toolkit for faith primary schools in Kenya that incorporates faith values, using eco-schools as a strategy for the curriculum of faith-based schools.

Islam, Christianity and African spirituality all have important ways of relating to the environment, and many faith groups have goals for education and community engagement. Mosques in Uganda are promoting Green Fridays–designated days for discussion and action on the environment. In addition, more than 10,000 Christian and Muslim congregations in Ghana will hold awareness creation workshops on environmental protection.

Illegal Wildlife Trade

With support from USAID through ABCG, WWF and ARC announced a first-ever partnership with faith leaders from across Africa to unite against the killing of endangered species caused by illegal wildlife trade. In an unprecedented move, 50 African religious representatives from different faiths and countries have come together to call for the end of illegal wildlife trade, which is annihilating the continent's elephant and rhino populations.

WWF and ARC have worked with leaders from Christian, Muslim, Hindu, Jewish, Buddhist and traditional faiths to align around the wildlife crisis facing Africa. We have held several meetings including a wildlife safari in Nairobi National Park to discuss the role of religion in Africa to halt the trade. The leaders gave a moving tribute to all of the wildlife exterminated due to the trade. They also prayed for the wellbeing of local communities and for the many hundreds of rangers that have lost their lives protecting wildlife across Africa.

See online article entitled "Many Heavens, One Earth, Our Continent": African Faith Leaders Launch Conservation Commitmentshttp://www.abcg.org/news?article_id=5

Clean Energy Technology for Cooking and Lighting Barriers and Breakthroughs: Event Summary

Mary Mavanza, Governance Officer with the Jane Goodall Institute's Gombe Masito-Ugalla Ecosystem Program, revealed that refugees fleeing violence from DRC Congo to Kigoma, Tanzania, carried their hearth-stones as one of the few household possessions they salvaged.

In Kenya, the Agikuyu in the Central province consider it a bad omen for the hearth fire to go out while the homestead owner is still living. The hearth is the setting for interpersonal bonding, among other social and practical uses, in the Maasai ethnic group. Such is the social significance of the cooking hearth in a traditional community particularly in rural African landscapes to this day. This is but one of the several key points acknowledged as factors in effective cleaner cookstove adoption projects, captured succinctly by Bob Lange's triple goal of health, conservation, and the welfare of women.

Figure 41. Women at a stove-making training. Photo courtesy of the International Collaborative's Maasai Stoves & Solar Project.

The Clean Cookstoves event highlighted several key considerations in the gradually growing sector of clean energy products for households highly dependent on biomass as feedstock.

Laura Clough and her study with GVEP International depicted the vast array of improved cookstove types available in local markets, but this correlated with a costly and fragmented distribution system particularly towards the retail end. Moreover consumer awareness on the benefits of efficient cookstoves was wanting, and on the produce end, quality control was a significant factor that undermines any efficiency "improvements" made on a product. Other main challenges include a dearth of capital financing, scant capacity on the products and biomass feedstock supply chain, and cultural resistance including low prioritization of energy efficient appliances.

To address some of these challenges, ABCG supported the development of a toolkit to help practitioners identify the most suitable tools and practices in a given context. Download the *Toolkit for Implementing Household Energy Projects in Conservation Areas* here.

Presentation: *Energizing Conservation Efforts*

Bob Lang of the International Collaborative's Maasai Stoves & Solar Project stressed the importance of three interdependent and interconnected goals: environmental conservation, health, and women's welfare. In particular, projects have to incorporate sufficient sensitivity to the personal and cultural values of a community vis-à-vis cookstoves and home heating, in conjunction to seeking market-based solutions to production, supply and uptake. His approach is explicitly participatory with locals from the outset to maximize on local talent, knowledge skills and buy-in. His process features rapid prototyping and continual development adapting to local conditions by way of intimate consultation and partnership with the local community. Thus an important lesson is that solutions have to consider the local context as an inherent criterion in scoping a program or project.

Presentation: *It is not just about cooking!*

The Global Alliance for Clean Cookstoves (GACC) is "a public-private initiative to save lives, improve livelihoods, empower women, and protect the environment by creating a thriving global market for clean and efficient household cooking solutions". Brandi Suttles and Stevie Valdez presented the Alliance's approach to the sector by convening actors including producers, distributors and advocates. GACC aims to structure and promote worldwide standards, partnerships, investments, research and policy change. The Alliance champions a market-based strategy as a response to the supply chain issue, by pursuing a three-pronged strategy of enhancing demand, strengthening supply and fostering an enabling environment.

Presentation: *Fostering an Enabling Environment—The Role of Conservation*

Overall, the talk proved an engaging exchange of findings, recommendations and challenges. The event portrayed several major benefits to having efficient cookstoves and clean energy products adopted across communities highly dependent on biomass: Woodlands are not wiped out, leading to a chain reaction of habitat degradation; users spend less effort searching for sources and more being socially/economically productive, and; health benefits are felt from the individual to the community at large. The conservation community is recognizing the complex dynamic between meeting the needs of both the human and animal populations in areas of ecological importance. Addressing household energy needs can help reduce pressure on natural resources such as firewood and bring positive

impacts for local residents. For example, the surveys showed that households could travel up to 50 km to the nearest town to purchase kerosene for lighting and spend over 5 hours looking for firewood for cooking. Encouraging the use of technologies such as solar lanterns and energy efficient stoves can help reduce the time spent on fuel collection as well as reducing household expenditure.

Read the 2013 newsletter on Clean Energy Technologies here

ABCG Equips Conservation Organizations to Support Staff, Partners, and Local Communities Affected by HIV and AIDS

Throughout sub-Saharan Africa, millions of adults and children are living with HIV. The disease affects everyone and can have a devastating effect on families, economies, communities, and the environment. Since 2001, the Africa Biodiversity Collaborative Group (ABCG) has been working with partners in Eastern and Southern Africa to learn about the environmental impacts brought on by HIV and AIDS and to identify and catalyse coping strategies for the conservation sector to reduce these impacts.

2013's World AIDS Day theme was *Shared Responsibility: Strengthening Results for an AIDS-Free Generation*, which served as a reminder about the contributions that all sectors can continue to make in overcoming this devastating disease. ABCG's work on HIV and AIDS aims to raise awareness of the linkages between HIV and AIDS and the environment, and provide guidance to conservation organizations on actions they can take to reduce the impacts on their organizations, their partners and local communities, and the environment.

Effects of HIV and AIDS on the Environment and Conservation Institutions

Impacts on the environment are mainly through loss of conservation capacity and changes in use of land and natural resources. All sectors are affected by AIDS, but the conservation sector is particularly vulnerable because conservation staff are often posted to remote areas without their families, where they may be more susceptible to contracting and/or spreading the disease. Certain natural resource extractors are at higher risk due to the nature of their work, for example fishermen and timber loggers, who may rely on transactional sex to secure resources for income generation. In addition, AIDS affects the way that people use land and natural resources, often leading to damaging and unsustainable practices such as the illegal over-hunting of wildlife for the bushmeat trade.

To address these impacts, the Africa Biodiversity Collaborative Group developed a manual on HIV/AIDS and the Environment: A Manual for Conservation Organizations on Impacts and Responses. The manual provides background information on the origin of HIV, the nature of AIDS and the AIDS epidemic. It outlines the links between the disease and the environment, both on conservation capacity and on use of land and natural resources, showing how gender and poverty have a strong influence through a series of complex linkages. It then describes actions that can be taken to reduce impacts, to help maintain conservation capacity in organizations and local communities; to reduce unsustainable practices as a result of AIDS; and support AIDS-affected communities through alternative livelihoods based on sustainable natural resource use or other low-labor-intensive approaches. Finally, it outlines further needs for learning, collaboration and scaling up. It draws heavily on the work of several

conservation organizations and programs working in this field, mainly in sub-Saharan Africa, and illustrates a wide variety of experiences.

Training

In November 2013, ABCG and its member the Jane Goodall Institute (JGI) held a training workshop on Equipping Conservation Groups to Mitigate HIV and AIDS in the Workplace in Kigoma, Tanzania. The workshop brought together 34 people from conservation NGOs, local government, national parks, and partner NGOs to review the impacts of HIV and AIDS on the environment, conservation staff, and local communities and to better equip these groups to develop workplace policies and programs to mitigate the impacts of HIV and AIDS. Organization of the workshop was led by Mary Mavanza of JGI-Tanzania and consultant Daulos Mauambeta. Mr. Mauambeta has long been an advocate for empowering conservation organizations to better address these issues; we were very pleased to have him serve as the workshop facilitator and trainer. Mr. Mauambeta shared many examples of how HIV and AIDS had negatively impacted conservation efforts, including a decline of wildlife populations in a Malawian protected area following infection of a large number of protected area staff, who were then unable to perform their duties.

Topics included:

- Background on HIV/AIDS and global trends
- Why the conservation community is vulnerable to HIV and AIDS
- Linkages between conservation and HIV and AIDS
- Mainstreaming HIV and AIDS in conservation programs
- Developing an HIV and AIDS workplace policy

Pastory Magingi of ABCG member African Wildlife Foundation shared principles from the HIV and AIDS workplace policy that AWF adopted in 2004 to provide staff and families with information and resources on prevention and care. Key components of their policy include assurance of confidentiality, job security and employee benefits, provision of voluntary counseling and testing services, educational programs, treatment services, condom distribution, and medical services. Participants in the workshop were strongly encouraged to work with their organizations to encourage development of workplace policies and programs.

At the close of the workshop, each participant was asked to write their individual commitments to take action for mitigating the impacts of HIV and AIDS in their organizations and in their own lives. These commitments include:

- Help in the formulation of an HIV/AIDS policy at my work place and supporting staff members to know their HIV status and get help where necessary
- Request date for meeting with other staff to advice how HIV/AIDS may spread in our workplace and to the nearby villagers
- By the end of the year, get myself tested for HIV

- Introduce an HIV/AIDS program in my environmental education program
- I will not stigmatize people with HIV/AIDS and I will sensitize others to do the same

Staff from the Jane Goodall Institute continued their work an additional day, during which they drafted an internal workplace policy on HIV and AIDS. This policy is now being refined and will be reviewed by all JGI country offices before it is finalized.

Figure 42. Presentation at the workshop on equipping conservation groups to mitigate HIV and AIDS in the workplace in Kigoma, Tanzania. Photo courtesy of Natalie Bailey.

Highlights from the Integrated Freshwater Conservation and WASH M&E Workshop

ABCG has explored linkages between biodiversity protection and the relationships between water conservation, water pollution and human activities. While ABCG has invested and produced policy papers and analysis on forest, woodland and savannah ecosystems, her member organizations had not focused very much on freshwater ecosystems and the myriad of threats to biodiversity in rapidly changing landscapes In Africa.

Sub-Saharan Africa has considerable aquatic treasures, containing a rich diversity of life. For example, the Zaire River basin is the most species rich in the world, while the Great Lakes—Tanganyika, Victoria and Malawi—each harbour rich diversity of fisheries. Unfortunately the productivity and diversity of Africa's ecosystems are threatened by deforestation, agricultural production and municipal and industrial production.

Figure 43. Workshop participants discussing value-added indicators. Photo courtesy of Kamweti Mutu /ABCG.

In order to protect and conserve freshwater and its biodiversity in Africa, ABCG has supported this work to bring together ABCG member organizations and several development organizations to promote policies, plans and projects that integrate access to water supply and sanitation with the conservation and sustainable management of freshwater resources. A workshop was co-sponsored by

the USAID Bureau for Africa and ABCG. This event, entitled the *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 WASH Alliance, Millennium Water Alliance, Neighbours Initiative Alliance, Netherlands Development Organization (SNV), Total LandCare, TNC, Water for People, Water Aid East Africa, Water and Sanitation for the Urban Poor, Wetlands International, World Vision, 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, and CI, in collaboration with ABCG members, workshop participants and WASH and conservation partner organizations, will refine the framework in the coming month. 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.

LIST OF IN-TEXT HYPERLINKS

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Scenario Planning for Biodiversity Conservation in Africa: Mapping Future Trends and Interventions in the Next Ten Years	http://www.abcg.org/action/document/download?document_id=445
30 Years Horizon	http://www.abcg.org/action/document/download?document_id=288
Protecting Hard-Won Ground	http://www.abcg.org/action/document/download?document_id=690
The Future of Biodiversity in Africa: Report from the ABCG Washington Consultation, May 2008	http://www.abcg.org/document_details?document_id=445
The Future of Biodiversity in Africa—Report of a consultation, 2007–2009	http://www.abcg.org/action/document/download?document_id=288
Dar Vision for the Future of Biodiversity in Africa	http://www.abcg.org/planning_for_biodiversity
English	http://www.abcg.org/action/document/download?document_id=359
French	http://www.abcg.org/action/document/download?document_id=321
Portuguese	http://www.abcg.org/action/document/download?document_id=289
Partnering with Extractive Industries for the Conservation of Biodiversity in Africa: A Guide for USAID Engagement	http://pdf.usaid.gov/pdf_docs/PNADN726.pdf

Text	Hyperlink
Biodiversity Offsets: Pilot Projects and Potential in Africa	http://www.rmportal.net/library/content/abcg-documents/biodiversity-offsets-pilot-projects-and-potential-in-africa
Building Private-Sector Partnerships for Conservation: Lessons learned from the collaboration between WCS, CIB, and the Republic of Congo in forestry concessions	http://www.abcg.org/action/document/download?document_id=403
Biodiversity Impacts of Chinese Investment in Africa and Opportunities for Conservation	http://www.abcg.org/action/document/download?document_id=138
Private-Sector Partnerships for Conservation	http://www.abcg.org/action/document/download?document_id=329
Are partnerships the key to conserving Africa's biodiversity? Four partnership case studies between mining companies and conservation NGOs	http://www.abcg.org/document_details?document_id=105
Ghana	http://www.abcg.org/action/document/download?document_id=742
Liberia	http://www.abcg.org/document_details?document_id=741
Building Private-Sector Partnerships for Conservation: Lessons learned from the collaboration between WCS, CIB, and the Republic of Congo in forestry concessions	http://www.abcg.org/action/document/download?document_id=403
see Appendix 2 p. 24 of the BATS for USAID/Africa FY2008 Annual Report for ABCG	http://www.abcg.org/action/document/download?document_id=642
MENTOR-FOREST	http://www.fws.gov/international/pdf/factsheet-mentor.pdf
Tropical Forest Conservation and Industry Partnership: An Experience from the Congo Basin	http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470673737.html
ABCG Extractive Industry Strategic Planning Workshop	http://www.abcg.org/action/document/download?document_id=136

Text	Hyperlink
Report on Impacts from Mining on Biodiversity Conservation in the Democratic Republic of Congo	http://www.abcg.org/document_details?document_id=744
L'Analyse de l'expérience de la réforme du secteur forestier pour en tirer des leçons nécessaires et contribuer au processus de la réforme du secteur minier en RDC (Analysis of the Forest Sector Reform Experience and Lessons Learned to Contribute to the DRC Mining Sector Reform Process)	http://www.abcg.org/action/document/download?document_id=29
Managing Land for Mining and Conservation in the Democratic Republic of Congo	http://www.abcg.org/action/document/download?document_id=75
When Elephants Fight, it is the Grass that Suffers: Artisanal Mining & Conservation in the DRC	http://www.abcg.org/action/document/download?document_id=95
Artisanal and Small-Scale Mining in Protected Areas and Critical Ecosystems Programme (ASM-PACE): A Global Solutions Study	http://www.abcg.org/action/document/download?document_id=460
Mitigating the Impacts from Mining in the DRC: Workshop on Strategy and Practice	http://www.abcg.org/action/document/download?document_id=536
Financial Disclosure and the Canadian Mineral Sector: Lagging Behind or Catching Up?	http://www.abcg.org/action/document/download?document_id=118
Analysis of the Forest Sector Reform Experience and Lessons Learned to Contribute to the DRC Mining Sector Reform Process	http://www.abcg.org/action/document/download?document_id=29
Moabi website	http://rdc.moabi.org/en/
memorandum of understanding	http://www.worldwildlife.org/press-releases/world-wildlife-fund-and-world-bank-sign-memorandum-of-understanding-on-africa-s-extractive-industries
Heart of Iron: Mining in the Congo Basin Rainforest	https://vimeo.com/heartofiron

Text	Hyperlink
Mitigating the Impacts from Mining in the DRC: Workshop on Strategy and Practice	http://www.abcg.org/action/document/download?document_id=536
A Global Review of National Guidance for High Conservation Value	http://www.abcg.org/document_details?document_id=195
Defining HCV Thresholds in Gabon: Year #1 Report—An Interim Report on Activities & Initial Results WCS, MBG and WWF	http://www.abcg.org/action/document/download?document_id=412
Defining HCV Thresholds in Gabon: Year #2 Report—An Interim Report on Activities and Initial Results	http://www.abcg.org/document_details?document_id=566
Testing approaches to define High Conservation Value thresholds in Gabon—Final Report (2015)	http://www.abcg.org/action/document/download?document_id=708
Devastating Decline of Forest Elephants in Central Africa	http://dx.doi.org/10.1371/journal.pone.0059469
Analyzing Biodiversity Conservation and Governance	http://www.abcg.org/governance_and_land
to Prevent Conflict and Crisis	http://www.abcg.org/governance_and_land
Biodiversity Conservation and Crisis: Key Issues for Consideration	http://www.abcg.org/action/document/download?document_id=321
Degazettment and Denotification of Protected Wildlife Areas in Kenya and Tanzania	http://www.abcg.org/action/document/download?document_id=480
Protected Area Downgrading, Downsizing, & Degazettement in Africa: local pressures, global demands, and everything in-between	http://www.abcg.org/action/document/download?document_id=84
Securing Forested Land Through Carbon Offset Projects: Pilot Projects from the African Wildlife Foundation in East Africa	http://www.abcg.org/action/document/download?document_id=698
Land Tenure, Reform, and Conservation Tools in South Africa and their Potential Application in Kenya	http://www.abcg.org/document_details?document_id=702

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The Impact of the New Constitution of Kenya and the National Land Policy on Community Conservation Objectives in Kenya: A Case Study of the Northern Rangelands Trust	http://www.abcg.org/action/document/download?document_id=699
Conservation in the Central African Republic: Threats and Successes	http://www.abcg.org/action/document/download?document_id=88
Wildlife Conservation in Zimbabwe: A Review of Relevant Statutes and an Assessment of Protected Areas, Conservancies, and Implications of the Indigenisation Policy	http://www.abcg.org/action/document/download?document_id=688
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Government Restrictions on the Use of Private Land in Kenya	http://www.abcg.org/action/document/download?document_id=745
Summary Report on: A Proposed Business Model for a Conservation Based Property in a Conservancy in Zimbabwe	http://www.abcg.org/action/document/download?document_id=539
Protected Area Degazettement, Downlisting, and Downsizing (PADDD)	http://www.abcg.org/protected_area_degazettement_downlisting_and_downsizing
Due diligence on lands at risk of or subject to land acquisitions in Uganda	http://www.abcg.org/document_details?document_id=281
PADDD*tracker.org	http://www.padddtracker.org/
Kenya's new constitution	http://www.kenyalaw.org/kl/index.php?id=398
Summary Report on: A Proposed Business Model for a Conservation Based Property in a Conservancy in Zimbabw	http://www.abcg.org/action/document/download?document_id=539
Status of Wildlife and Conservation Areas in Zimbabwe and Recommendations for Recovery	https://www.conftool.com/landandpoverty2014/index.php?page=browseSessions&print=head&form_session=22&metadata=show&presentations=show

Text	Hyperlink
Using Innovative Land Conservation Tools in Africa to Protect Land, Enhance Resource Management and Improve Community Livelihoods	https://www.conftool.com/landandpoverty2014/index.php?page=browseSessions&form_session=16&metadata=show&presentations=show
GKMGE Steering Committee Terms of Reference	http://www.abcg.org/action/document/download?document_id=657
Integrating Approaches to Food Security and Biodiversity	http://www.abcg.org/food_security
Finding Optimal Trade-offs Between Food Security and Conservation in Africa: A Review of Tools and Presentation of Case Studies from Zambezi and Ituri Landscapes	http://www.abcg.org/action/document/download?document_id=444
Food Security Strategies in the Kazungula and Zambezi Heartlands, and their Link with Conservation Impact and Climate Change	http://www.abcg.org/action/document/download?document_id=383
Integrated Landscape Initiatives: An Emerging Paradigm for African Agriculture, Development, and Conservation	http://www.abcg.org/action/document/download?document_id=280
Integrating Climate Change Adaptation and Mitigation in Agricultural Landscapes	http://www.abcg.org/action/document/download?document_id=506
The Impacts of Improved Goat Husbandry and Aquaculture on Local Food Security and Conservation in Siavonga District, Zambia	http://www.abcg.org/action/document/download?document_id=568
Potential contributions to food security from scaling up agroforestry and improved soil and water management practices in Burkina Faso	http://www.abcg.org/action/document/download?document_id=614
summary handout	http://www.abcg.org/action/document/download?document_id=261
Finding Optimal Trade-offs Between Food Security and Conservation in Africa: A Review of Tools and Presentation of Case Studies from Zambezi and Ituri Landscapes	http://www.abcg.org/action/document/download?document_id=444
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policy brief	http://www.abcg.org/action/document/download?document_id=158
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Integrated Landscape Initiatives: An Emerging Paradigm for African Agriculture, Development, and Conservation	http://www.abcg.org/action/document/download?document_id=280
first seminar	http://agrilinks.org/events/series-integrating-climate-change-nrm-feed-future-1
LPFN Forum in Nairobi, Kenya	http://peoplefoodandnature.org/event/nairobi-2012-international-forum/
Addressing Global Climate Change Through Adaptation and Actions in Woodlands, Grasslands and Other Ecosystems	http://www.abcg.org/global_climate_change
Learning By Doing:	http://www.abcg.org/climate_change_adaptation
Building Climate Change Adaptation Capacity in Africa	http://www.abcg.org/climate_change_adaptation
A Review of Climate Change Adaptation Initiatives within the Africa Biodiversity Collaborative Group Members	http://www.abcg.org/action/document/download?document_id=513
A Holistic Approach to Climate Change Adaptation in Africa: A Dialogue for Conservation and Development Organizations	http://www.abcg.org/action/document/download?document_id=59
A Review of Monitoring and Evaluation Approaches for Ecosystem-Based Adaptation	http://www.abcg.org/action/document/download?document_id=98

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A Systematic Approach to Incorporate the Human Response into Climate Change Conservation Planning	http://www.abcg.org/action/document/download?document_id=543
ABCG Project Documenting Human Responses to Changes in Weather and Climate in Africa	http://www.abcg.org/news?article_id=39
A Review of Climate Change Adaptation Initiatives Within the Africa Biodiversity Collaborative Group Members	http://www.abcg.org/action/document/download?document_id=513
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A Review of Monitoring and Evaluation Approaches for Ecosystem-Based Adaptation	http://www.abcg.org/action/document/download?document_id=98
A Systematic Approach to Incorporate the Human Response into Climate Change Conservation Planning	http://www.abcg.org/action/document/download?document_id=543
Considering the impact of climate change on human communities significantly alters the outcome of species and site-based vulnerability assessments	http://onlinelibrary.wiley.com/doi/10.1111/ddi.12355/abstract
ABCG Project Documenting Human Responses to Changes in Weather and Climate in Africa	http://www.abcg.org/action/document/download?document_id=700
qualitative research protocol	http://www.abcg.org/document_details?document_id=701
Considering the impact of climate change on human communities significantly alters the outcome of species and site-based vulnerability assessments	http://onlinelibrary.wiley.com/doi/10.1111/ddi.12355/abstract
Understanding Carbon Flux Under Conditions of Climate Change: Woodlands and Trade-Offs	http://www.abcg.org/understanding_carbon_flux
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Navigating Trade-offs in Landscape Scale Planning: Biodiversity, Oil, Timber, Carbon and Agriculture: A case study of the Murchison-Semliki Landscape	http://www.abcg.org/action/document/download?document_id=569

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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 Greater Mahale Ecosystem, Tanzania	http://www.abcg.org/action/document/download?document_id=578
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Avoiding Conflict and Balancing Trade-Offs: Biodiversity Conservation in the Context of Competing Land Uses	http://www.abcg.org/document_details?document_id=233
Optimizing trade-offs in woodland ecosystems: Carbon, Conservation and Communities	http://www.abcg.org/document_details?document_id=145
Vision 2030	http://www.vision2030.go.ke/cms/vds/Popular_Version.pdf
Applying Clean Energy and Sustainable Eco-Charcoal Technology to Address Deforestation as Part of Climate Change Mitigation in East Africa Landscapes	http://www.abcg.org/clean_energy_eco_charcoal
Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania	http://www.abcg.org/action/document/download?document_id=462
Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania: Toolkit for Implementing Household Energy Projects in Conservation Areas.	http://www.abcg.org/action/document/download?document_id=422
Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania	http://www.abcg.org/action/document/download?document_id=6
Review of Household Clean Energy Technology for Lighting Cooking and Charging in East Africa: Feedback Workshop from Imbirikani Site Survey	http://www.abcg.org/action/document/download?document_id=546
Clean Energy Technologies for Cooking and Lighting—Barriers and Breakthroughs	http://www.abcg.org/news?article_id=11

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Training Workshop on Clean Energy: Promotion of alternative energy, and energy saving technologies	http://www.abcg.org/action/document/download?document_id=574
Enabling Maasai women to access improved cook stoves in Mbirikani Group Ranch, Kenya: Technical Facilitation by Maasai Stoves and Solar Project	http://www.abcg.org/action/document/download?document_id=664
Review of Household Clean Energy Technology for Lighting, Charging and Cooking in East Africa—Kenya and Tanzania	http://www.abcg.org/action/document/download?document_id=462
Clean Energy Technology for Cooking and Lighting—Barriers and Breakthroughs: Event Summary	http://www.abcg.org/news?article_id=11
Training Workshop on Clean Energy: Promotion of Alternative Energy and Energy Saving Technologies	http://www.abcg.org/action/document/download?document_id=574
Maasai Stove and Solar Project of the International Collaborative	http://internationalcollaborative.org/
Grazing Management and Carbon Sequestration in Community Conservancies of Northern Kenya	http://www.abcg.org/grazing_management
Trained grazing coordinators and rangeland monitoring and evaluation (M&E) teams	http://www.abcg.org/action/document/download?document_id=550
Established methodological sampling stations	http://www.abcg.org/action/document/download?document_id=273
Grazing By-Laws Development Workshop	http://www.abcg.org/action/document/download?document_id=552
Held two workshops on integrated grazing	http://www.abcg.org/action/document/download?document_id=554
Held grazing plan dissemination meetings, reaching hundreds of residents per conservancy	http://www.abcg.org/action/document/download?document_id=551

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Compiled soil carbon and rangeland health	http://www.abcg.org/action/document/download?document_id=666
Created a biodiversity baseline	http://www.abcg.org/action/document/download?document_id=667
Plant compensation to grazing and soil carbon dynamics in a tropical grassland	https://dx.doi.org/10.7717/peerj.233
Validation of a remote sensing method of estimating grazing impacts in northern Kenya rangelands	http://www.abcg.org/action/document/download?document_id=665
Bridging the Gap between Global Health and Biodiversity:	http://www.abcg.org/global_health
HIV/AIDS and Conservation Linkages	http://www.abcg.org/hiv_aids_nrm
HIV/AIDS and Environment: A Manual for Conservation Organizations on Impacts and Responses	http://www.abcg.org/action/document/download?document_id=598
Dealing with the Challenges of HIV/AIDS at the College of African Wildlife Management-Mweka, Tanzania	http://www.abcg.org/document_details?document_id=182
A case study by the Wildlife and Environmental Society of Malawi which analyzed its financial costs of HIV/AIDS on the environment	http://www.abcg.org/action/document/download?document_id=51
HIV/AIDS Integration in Conservation Programs—the case of JGI TACARE project	http://www.abcg.org/action/document/download?document_id=176
Mainstreaming HIV/AIDS into NRM: AWF's AIDS Organizational Policy	http://www.abcg.org/document_details?document_id=502
Girls Peer-to-Peer Education: Equipping young women in Uganda to navigate life's challenges	http://www.janegoodall.org/programs/girls-peer-peer-education-program
Report on a Training Workshop on HIV & AIDS and Environment	http://www.abcg.org/action/document/download?document_id=670

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HIV/AIDS and Environment: A Manual for Conservation Organizations on Impacts and Responses	http://www.abcg.org/action/document/download?document_id=598
HIV/AIDS and Environment: A Training Guide for Conservation Organizations	http://www.abcg.org/document_details?document_id=669
Dealing with the Challenges of HIV/AIDS at the College of African Wildlife Management-Mweka, Tanzania	http://www.abcg.org/document_details?document_id=182
Equipping Conservation Groups to Mitigate HIV and AIDS in the Workplace	http://www.abcg.org/news?article_id=27
ABCG 2011 Annual Report	http://www.abcg.org/action/document/download?document_id=633
HIV/AIDS Peer Education Program, Uganda: Annual Report	http://www.abcg.org/document_details?document_id=703
Mainstreaming HIV/AIDS into NRM: AWF's AIDS Organizational Policy	http://www.abcg.org/document_details?document_id=502
Water, Sanitation, and Hygiene (WASH) and Conservation	http://www.abcg.org/wash_africa
Linking Biodiversity Conservation and Water, Sanitation, and Hygiene: Experiences from sub-Saharan Africa	http://www.abcg.org/action/document/download?document_id=409
Freshwater Conservation and WASH Integration Workshop	http://www.abcg.org/action/document/download?document_id=335
Freshwater Conservation and Water, Sanitation, and Hygiene Integration Guidelines: A Framework for Implementation in sub-Saharan Africa	http://www.abcg.org/action/document/download?document_id=533
Press-quality version	http://www.scribd.com/doc/191123515/Freshwater-Conservation-and-WASH-Integration-Guidelines-A-Framework-for-Implementation-in-sub-Saharan-Africa
Workshop on Integrated Indicators for Freshwater Conservation and WASH Programming	http://www.abcg.org/action/document/download?document_id=673

Text	Hyperlink
ABCG Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators	http://www.abcg.org/action/document/download?document_id=638
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brown bag presentation	http://www.abcg.org/action/document/download?document_id=314
event	https://www.wilsoncenter.org/event/linking-biodiversity-conservation-and-water-sanitation-and-hygiene-experiences-sub-saharan
Nature Based Solutions: Opportunities for Collaboration	http://programme.worldwaterweek.org/event/nature-based-solutions-2939
talk	http://programme.worldwaterweek.org/sites/default/files/sara_davidson_washconservation_final.pdf
World Water Week Daily	http://www.worldwaterweek.org/documents/WWW_PDF/Media/2013/WWD-mondayLOW.pdf
presented	http://www.washadvocates.org/learn/wash-and-environmental-conservation/
event	http://www.abcg.org/news?article_id=41
Highlights from the Integrated Freshwater Conservation and WASH M&E Workshop	http://www.abcg.org/action/document/download?document_id=631
Large-Scale Land Acquisitions	http://www.abcg.org/large_scale_land_acquisitions_and_conservation_in_africa
and Biodiversity Conservation in Africa	http://www.abcg.org/large_scale_land_acquisitions_and_conservation_in_africa

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JGI research on LSLA in the Masito-Ugalla ecosystem of western Tanzania	http://www.abcg.org/action/document/download?document_id=357
Jatropha	http://www.abcg.org/document_details?document_id=602
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Report on the Investment Environment and Safeguards Applicable to Large-Scale Agricultural Investments in Uganda	http://www.abcg.org/document_details?document_id=19
Due diligence on lands at risk of or subject to land acquisitions in Uganda	http://www.abcg.org/action/document/download?document_id=281
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An Assessment of Community Participation in Land Acquisitions in Mozambique and Tanzania	http://www.abcg.org/action/document/download?document_id=720
Regulatory Reform as a Path to Promote Gender-Equitable and Participatory Community Decision-making Processes on Land Investments	https://www.conftool.com/landandpoverty2015/index.php/Salcedo-LaVi%C3%B1a-381-381_paper.pdf?page=downloadPaper&filename=Salcedo-LaVi%C3%B1a-381-381_paper.pdf&form_id=381
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	http://www.abcg.org/document_details?document_id=595

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Assessment of the Impact of Voluntary Guidelines on the Responsible Governance of Tenure (VGS) on Environmental and Social Safeguards in SAGCOT Region	http://www.abcg.org/action/document/download?document_id=557
Large Scale Land Acquisitions in Ethiopia: Implications for biodiversity and communities	http://www.abcg.org/action/document/download?document_id=719
Governance of Large-Scale Land Acquisitions in Uganda: The role of the Uganda Investment Authority	http://www.abcg.org/action/document/download?document_id=142
Due diligence on lands at risk of or subject to land acquisitions in Uganda	http://www.abcg.org/document_details?document_id=281
Large-Scale Land Acquisitions in Kenya: Environmental and Social Impacts	http://www.abcg.org/action/document/download?document_id=619
The Role of Kenya's National Investment Authority in Identifying and Allocating Land for Private Investment	http://www.abcg.org/action/document/download?document_id=739
An Assessment of Community Participation in Land Acquisitions in Mozambique and Tanzania	http://www.abcg.org/action/document/download?document_id=720
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New Form (Land acquisition) to be used with ODK app and Android smartphones and tablets (English and Swahili versions)	http://www.abcg.org/document_details?document_id=558
Assessment of the Impact of Voluntary Guidelines on the Responsible Governance of Tenure (VGs) on Environmental and Social Safeguards in SAGCOT Region	http://www.abcg.org/action/document/download?document_id=557
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Delivering a Spatial Monitoring and Reporting Tool (SMART) to Improve and Report Effectiveness of Biodiversity Conservation Investments in Central and East Africa	http://www.abcg.org/smart_law_enforcement
Launched the first public version of SMART 1.0	http://www.abcg.org/action/document/download?document_id=11
Provided updated training materials in both French and English languages	http://www.abcg.org/document_details?document_id=571
SMART Training Report: Regional Technical Training Workshop—Central Africa	http://www.abcg.org/action/document/download?document_id=559
SMART Training Report: Regional Technical Training Workshop—East Africa.	http://www.abcg.org/action/document/download?document_id=560
Technical Training Manual for SMART 3.0	http://www.abcg.org/action/document/download?document_id=674
SMART Implementers and Trainer's Workshop—Final Report	http://www.abcg.org/action/document/download?document_id=675
Open Data Kit	https://opendatakit.org/
Addressing Challenges in Coastal Conservation	http://www.abcg.org/western_indian_ocean
in the Western Indian Ocean	http://www.abcg.org/western_indian_ocean
Western Indian Ocean Coastal Challenge	http://wiocc.org/
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second	http://www.abcg.org/document_details?document_id=570
third technical workshops	http://www.abcg.org/document_details?document_id=564

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Climate Change in the Western Indian Ocean: A Situation Assessment and Policy Considerations	http://www.abcg.org/action/document/download?document_id=499
conservation trust fund	http://www.abcg.org/action/document/download?document_id=678
Western Indian Ocean Coastal Challenge	http://www.wiocc.org/
Climate Change in the Western Indian Ocean: A Situation Assessment and Policy Considerations	http://www.abcg.org/action/document/download?document_id=499
Developing a Conservation Trust Fund For the Western Indian Ocean Coastal Challenge (WIO-CC)	http://www.abcg.org/action/document/download?document_id=678
Faith & Conservation in Africa	http://www.abcg.org/faith_and_conservation
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Many Heavens, One Earth, Our Continent: African Faith Commitments for a Living Planet	http:\www.arcworld.org\downloads\African_Commitments_web-FINAL.pdf"
Faith-Based Education for Sustainable Development (ESD) Teacher's Toolkit	http://www.arcworld.org/downloads/ARC-Faith-based-ESD-toolkit.pdf
Faith-Based Environmental Education Stakeholders' Workshop	http://www.abcg.org/document_details?document_id=680
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Taoists Protect Lives	http://www.cridao.com/culture/2014/1027/25064.html
MENTOR/BEAN Fellowship Program	http://www.fws.gov/international/signature-initiatives/mentor-bean.html
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Building Capacity and Networks for Bushmeat Solutions	http://www.abcg.org/bushmeat_briefing_1
Bushmeat in Eastern and Central Africa	http://www.abcg.org/bushmeat_briefing_2
Alternatives, Enforcement and Capacity-Building: Examples of Key Solutions to Bushmeat Challenges	http://www.abcg.org/bushmeat_briefing_3
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Emerging Infectious Diseases, Zoonoses & the Human-Livestock-Wildlife Health Interface: A Primer for Conservationists	http://www.abcg.org/action/document/download?document_id=401

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Emerging Infectious Disease, Zoonoses and the Human-Livestock-Wildlife Health Interface: A Primer for Conservationists	http://www.abcg.org/action/document/download?document_id=401
Using Private Sector Alliances to Address Drivers of the Bushmeat Trade: Experience from AWF	http://www.abcg.org/action/document/download?document_id=78
Are partnerships the key to conserving Africa's biodiversity?	http://www.abcg.org/document_details?document_id=105
Building Private-sector Partnerships for Conservation (PSPCs): Lessons learned from the Buffer Zone Project in Northern Congo	http://www.abcg.org/action/document/download?document_id=403
Using Private Sector Alliances to Address Drivers of the Bushmeat Trade: Experience from AWF	http://www.abcg.org/action/document/download?document_id=78
Are partnerships the key to conserving Africa's biodiversity?	http://www.abcg.org/action/document/download?document_id=105
WWF Sacred Earth program	http://worldwildlife.org/initiatives/sacred-earth-faiths-for-conservationundefined
Many Heavens, One Earth, Our Continent: African Faith Commitments for a Living Planet	http://www.arcworld.org/projects.asp?projectID=575
volume of the same title	http://www.arcworld.org/downloads/African_Commitments_web-FINAL.pdf
"Many Heavens, One Earth, Our Continent": African Faith Leaders Launch Conservation Commitments	http://www.abcg.org/news?article_id=5
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Download the Toolkit for Implementing Household Energy Projects in Conservation Areas here	http://www.abcg.org/action/document/download?document_id=422

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Presentation: Energizing Conservation Efforts	http://www.abcg.org/action/document/download?document_id=594
Presentation: It is not just about cooking!	http://www.abcg.org/action/document/download?document_id=593
Presentation: Fostering an Enabling Environment—The Role of Conservation	http://www.abcg.org/action/document/download?document_id=592
Read the 2013 newsletter on Clean Energy Technologies here	http://www.abcg.org/news?article_id=6