

CEPF FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Legal Name: Center for Applied Biodiversity Science

Project Title (as stated in the grant agreement): *Instituting a Standardized Sustainable Biodiversity Monitoring System in the Eastern Arc / Coastal Forests of Tanzania and Kenya*

Implementation Partners for this Project: Sokoine U in Tanzania, the American Museum of Natural History in NYC

Project Dates (as stated in the grant agreement): February 1, 2005 - June 30, 2009

Date of Report (month/year): August 2009

II. OPENING REMARKS

Provide any opening remarks that may assist in the review of this report.

This is the final report for this project, including the updated analysis using satellite data from 2007.

III. ACHIEVEMENT OF PROJECT PURPOSE

Project Purpose: *A comprehensive sustainable monitoring system involving all key stakeholders is implemented in the EACF hotspot and the information is made widely available and accessible.*

Planned vs. Actual Performance

Indicator	Actual at Completion
Purpose-level:	
1. Standardised monitoring protocols, developed and agreed by all key stakeholders, are published by Sept 2005	(Handled by BirdLife – GEM#11171)
2. Monitoring efforts by stakeholders are taking place using the standardised protocols covering all key species and sites outcomes across the EACF hotspot by Dec 2005	
2. EACF hotspot Conservation Outcomes database managed and maintained, and making information widely available to key institutions within the hotspot and on the web.	

Describe the success of the project in terms of achieving its intended impact objective and performance indicators.

Were there any unexpected impacts (positive or negative)?

IV. PROJECT OUTPUTS

Project Outputs:

Planned vs. Actual Performance

Indicator	Actual at Completion
Output 1: A baseline of monitoring knowledge, data and practitioners in the EACF and the current main gaps and needs established. Information on existing monitoring activity, baseline knowledge of the status of biodiversity and rates of biodiversity loss in the hotspot will be made available to underpin the development of standardised protocols for monitoring across the hotspot.	(Outputs 1-4 handled by BirdLife – GEM#11171)
<i>1.1. Comprehensive list of main actors implementing biodiversity monitoring in the EACF hotspot available by end of March 2005</i>	
<i>1.2. Comprehensive review of approaches and protocols used for biodiversity monitoring in the EACF hotspot available by end of March 2005</i>	
<i>1.3. Gaps in monitoring data identified and approaches to fill them documented by end of June 2005</i>	
<i>1.4. Baseline monitoring document reviewing ongoing activities and systems and highlighting gaps published by end Sept 2005</i>	
Output 2: Protocols for biodiversity monitoring developed, agreed, standardised and implemented by all key stakeholders across the EACF hotspot. Building on the information above, a workshop of the key stakeholders will be convened as a main mechanism for developing consensus and ownership of the protocols. Agreements will be signed with the main stakeholders to institutionalise collaboration.	See above
<i>2.1. Workshop involving all key stakeholders in biodiversity monitoring in the EACF hotspot organised in the region by June 2005.</i>	
<i>2.2. Agreed common methodologies for species, sites and habitats monitoring available by June 2005.</i>	
<i>2.3. Standard monitoring protocol/manual explaining priority sites and species for monitoring; types of data and how they will be recorded; appropriate monitoring products; and allocation of responsibilities published by Sept 2005</i>	
<i>2.4. MOUs signed between the key players involved in collection, handling and disseminating of monitoring information by Dec 05</i>	
Output 3: The trends in conservation status and	See above

<p>threats to selected species, sites and habitats in the EACF hotspot after four years of CEPF investment assessed and documented. A set of model sites will be selected through a participatory process based on objective and pragmatic criteria. At these sites, data will be systematically collected by different stakeholders at species, sites and habitats/landscape levels using the protocols agreed above. Institutions and individuals working in the hotspot (both those receiving and those not receiving CEPF support) will be encouraged to contribute to monitoring. Mechanisms will be put in place to mainstream monitoring in government, institutions', and communities' programmes.</p>	
<p><i>3.1. Model sites to demonstrate biodiversity monitoring using the agreed framework set-up and running</i></p>	
<p><i>3.2. Systematic data collection at selected sites to monitor biodiversity at species, site, habitat/landscape/corridor levels taking place over the duration of the project.</i></p>	
<p><i>3.3. Regular reports on the biodiversity status and trends, changes in threats and actions to address them produced and disseminated widely over the duration of the project.</i></p>	
<p>Output 4: A comprehensive database developed and maintained where information on the Conservation Outcomes of EACF hotspot is stored and from where such information is readily available and regularly distributed.</p>	See above
<p><i>4.1. List of all major depositories of information on the EACF hotspot available</i></p>	
<p><i>4.2. Updated Outcomes database available and populated continuously.</i></p>	
<p><i>4.3. Appropriate GIS data on EACF hotspot regularly analysed and readily available.</i></p>	
<p><i>4.4. Conservation outcomes database for the EACF hotspot available on the web</i></p>	
<p>Output 5: A forest cover and change detection map (1990-2000) for the coastal forest areas of the Eastern Arc Mountains is produced and distributed widely within the region.</p>	
<p><i>5.1. Both DC and Sokoine University remote sensing (RS) team assembled, initial image database created, and validation options finalized by month 2.</i></p>	<p>This product was completed before the extension was requested to conduct an update. The original study was done by bringing the Sokoine U. team to CABS and beginning the analysis together. The Sokoine team continued with image analysis while back at home, sending files via ftp to CABS for review and comment. Finally, Karyn Tabor of CABS went to Sokoine to work with Sokoine to complete the project. This product was the first map of the region showing with precise detail the distribution of the remaining patches of natural forest and woodland and areas of loss between 1990 and 2000. The results were published in the peer-reviewed journal, Journal of East African Natural History</p>
<p><i>5.2. Training workshop held in Tanzania, lead by DC RS trainer by month 3.</i></p>	<p>This workshop was held, as described in the process described in response to 5.1</p>

<p>5.3. Remote Sensing for Biodiversity Habitat Monitoring training held in Nairobi with partners by month 3.</p>	<p>This workshop was held, again as described in the response to 5.1. The workshop however was held at Sokoine U rather than in Nairobi. This was because of the laboratory facilities available there and more importantly because the most relevant audience, technical students and faculty that could most likely contribute to habitat monitoring in Tanzania, is there.</p>
<p>5.4. Landsat images processed by Sokoine University by month 5.</p>	<p>Completed.</p>
<p>5.5. Validation using aerial surveys and available supplementary ground data performed/gathered by month 7.</p>	<p>Completed. Although it should be noted that less data were made available than expected and later that expected. These data were generated by another research who was also funded by CEPF.</p>
<p>5.6. Second workshop held in Tanzania lead by DC RS trainer to review mosaic, complete QA/QC, and provide statistical analyses training by month 9.</p>	<p>Completed.</p>
<p>5.7. Fragmentation and overlay analyses models run on data by Sokoine RS Team by month 10.</p>	<p>Completed and done in accordance with CI's core Outcomes Monitoring indicators and results are part of the published paper.</p>
<p>5.8. Map produced by DC mapping laboratory and distributed to regional team and partners by month 12. Finished product will be stored in computers within an institution in Kenya (National Museums) and Tanzania (Sokoine University).</p>	<p>Done with input from CABS' cartographer. In addition, the cartographer was sent to Sokoine to discuss map layout options and to conduct training on cartography to the partners and other staff and students at Sokoine.</p>
<p>Output 6: Project Extension: Update the forest cover and change map to include changes through 2006/2007. This requires the purchase and analysis of more recent satellite images, plus field visits to some areas that were considered the most-difficult to classify during the work conducted for Output 5.</p>	
<p>6.1. Team of analysts assembled, comprised of the same two analysts from Sokoine U. plus Ned Horning from AMNH who will serve the role of support, guidance and QC formerly served by Karyn Tabor of CABS.</p>	<p>Ned Horning was contracted to help lead the analysis, since he has excellent expertise and was based at Sokoine at the time. His role was well served as planned.</p>
<p>6.2. Landsat-7 images searched, ordered and received.</p>	<p>Completed.</p>
<p>6.3. New Landsat images imported, coregistered and combined with 2000 imagery for classifications of changes from 2000 to 2006/7.</p>	<p>Completed.</p>
<p>6.4. Field surveys conducted in the south-eastern portion of the study area to assist image interpretation and validation.</p>	<p>This was limited to using existing field and aerial validation available at the time. The Sokoine team could not manage to find time to conduct additional field work, because of increasing commitments they had during this project. While a frustration, we believe the increasing demand for their time requested by the government and other REDD-associated activities demonstrates the value of the capacity building and product generation that this project has had.</p>
<p>6.5. Recent deforestation classified using the new imagery, combined into a regional mosaic, filtered and merged with the 1990 - 2000 product. Statistics from overlays with KBAs</p>	<p>The analyses listed here have been completed. The final map has been produced and KBA statistics have been generated and communicated in country. The core Outcomes</p>

<i>produced.</i>	Monitoring indicators have been updated. In addition, a second paper is in preparation for a peer-reviewed journal. This one will include data on biomass, using a new data product from colleagues at Woods Hole Research Center and will report CO2 emissions during the study period.
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Describe the success of the project in terms of delivering the intended outputs.

This project, including the extension to update the analysis using data from 2007, has been completed. The results are already being used in country. The original analysis of deforestation patterns and rates has been written up in the context of threat to protected areas. This has been submitted for publication to the Journal of East African Natural History, with Karyn Tabor as lead author and all partners as co-authors. The update study is currently being written up for publication as well. This is being written in the context of greenhouse gas emissions with commentary on the importance of protected areas for national level emissions reductions from land use change. The lead author will be Fabiano Godoy from CABS, with other contributors, including some partners who have provided biomass data. These data products have already been of high value to Tanzania, as they have been used in Tanzania's emissions calculations for their REDDiness planning as part of their work supported by the World Bank's FCPF program.

Were any outputs unrealized? If so, how has this affected the overall impact of the project?

No.

V. SAFEGUARD POLICY ASSESSMENTS

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

This project did not include any field experiments or sample taking, and thus we believe there are no concerns regarding these safeguard policies.

VI. LESSONS LEARNED FROM THE PROJECT

Describe any lessons learned during the various phases of the project. Consider lessons both for future projects, as well as for CEPF's future performance.

This is a very cloudy and seasonal area, which makes satellite image interpretation very difficult. Any follow up should include thorough ground and aerial surveys to assist image interpretation. Also, two images per year may improve classification, since this could help classification of seasonal woodlands. That said, we have achieved high classification for such vegetation formations.

Project Design Process: (aspects of the project design that contributed to its success/failure)

A common difficulty is assessing the technical expertise of recommended partners before we begin a project. While the Sokoine staff learned quickly, we had to work hard to quickly bring them to the level needed for quality analysis. We are very happy with the level of experience they have now. In general it would be best to be able to travel to the region during project planning and proposal preparation.

The largest learning experience has to do with our overall process in Outcomes Monitoring for CEPF. We have relied on short-term projects to conduct what needs to be long-term monitoring. This puts the entire monitoring agenda at risk. We have always believed that there should be a separate monitoring program funded by interested donors, rather than tapping into project resources. That said, all monitoring projects were mainly capacity-building projects that included generation of a product needed for monitoring. But we are now in a situation where there is no guarantee that we will continue to monitor CEPF investment areas, there is no budget to do so, and there is no process to ensure consistency when it is done.

The products generated by the CEPF Outcomes monitoring projects, especially the deforestation analyses, have been extremely valuable in the countries where this has been conducted. They form the basis of national REDD strategies and national proposals to the World Bank, UN, etc, not to mention being these bases for assessments of threat to biodiversity.

We believe that we really need a strategy to ensure that habitat monitoring continues in a consistent manner, and that it is done for the sake of monitoring rather than trying to do monitoring and capacity building at the same time. Both are needed, but trying to do both at the same time is more difficult. Our colleagues at some Universities are finally making progress on more-automated approaches to forest monitoring. A new strategy could be to partner with them when particularly large regions are concerned. We are now in a new phase of developing new metrics, and one can only imagine that habitat extent and loss would be core to any set of indicators of CI's work progress. We'd be glad to recommend strategies to CEPF that are scientifically rigorous, that are aligned with CI metrics, that continue to be aligned with the core indicators of the CBD, and that have added benefits of being useable for estimation of climate-change impacts.

On the last point, we believe that we should explore an assessment of the impact of CEPF's investments in reducing greenhouse gas emissions. It will be difficult to attribute directly reductions in emissions to CEPF investment, but it could be explored. For example, CEPF was one of several major donors to Madagascar's conservation efforts, and we saw a large reduction in deforestation rates. Local politics also played a role. Nevertheless it is something that we can also discuss. The same can be said for GCF investments.

Project Execution: (aspects of the project execution that contributed to its success/failure)

Images were more difficult to analyze than expected, having lots of clouds and having forest-to-woodland transition areas that were difficult to interpret. We in part relied on receiving more and better aerial survey data than we actually eventually did receive.

VII. ADDITIONAL FUNDING

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes
		\$	
		\$	
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***Additional funding should be reported using the following categories:**

- A** *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*
- B** *Complementary funding (Other donors contribute to partner organizations that are working on a project linked with this CEPF project)*
- C** *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*
- D** *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

Provide details of whether this project will continue in the future and if so, how any additional funding already secured or fundraising plans will help ensure its sustainability.

Sokoine University has been successful in fundraising from the government and other sources to conduct similar analyses for the Eastern Arc Mountains. Also, this study contributed to Tanzania’s application to the World Bank FCPF program, by providing quality data to calculate recent greenhouse gas emissions and by demonstrating in-country capacity for forest monitoring. These two factors are very important, perhaps decisive, in the World Bank’s funding decision. We believe that we have contributed to the country’s success in obtaining FCPF support, which has major implications for financing forest planning and conservation work in country and reducing its greenhouse gas emissions.

VIII. ADDITIONAL COMMENTS AND RECOMMENDATIONS
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In country partners at Sokoine U were integral to the project throughout its duration. Neil Burgess was also very valuable in managing the in-country relationships and communication of results with the Tanzanian Government and partners. A workshop was held to communicate the results, and this included sending Kellee Koenig, our cartographer, to Tanzania.

VIII. INFORMATION SHARING

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned and results. One way we do this is by making programmatic project documents available on our Web site, www.cepf.net, and by marketing these in our newsletter and other communications.

These documents are accessed frequently by other CEPF grantees, potential partners, and the wider conservation community.

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