Collaborative Ecosystems Conservation of Ghana's Lake Bosumtwi Basin

PROGRESS REPORT 1

Activity implementation is generally moving according to schedule (project work plan and logical framework). The team is currently working closely with the district assemblies and community members who are very supportive with respect to mobilization of members for project activities. The achieved results have been arranged under the different objectives

ACTIVITY 1: FORMATION AND CAPACITY BUILDING OF COMMUNITY RESOURCE MANAGEMENT COMMITTEES (CRMCS)

The approach used was sensitization (through community durbars, community information centers broadcast and plenary discussions) of the communities on the Community Resources Management Area (CREMA) concept and the formation of CREMA committees. Sensitization was carried out in all fringing communities of the lake. Pursuant to CREMA protocols, communities were tasked to select a seven or more member team to form the Community Resource Management Committee (CRMC) to represent them on the CREMA (Seven or more membership is dependent on community population). The team stressed the need for the membership to be based on existing community governance structures, gender sensitive and broad based. Accordingly, CRMCs of all 20 direct fringing communities have been formed and CREMA executive committee duly elected. The CREMA Executive committee has been formed to oversee the work of the CRMCs. Currently, the CRMCs are working and validating the CREMA bye-laws and constitution.

To facilitate activities of the committees, the lake catchment area CREMA was zoned into two, the Bosomtwe lake zone headquartered at Abono and the Bosome Freho lake zone headquartered at Duase. Capacity building workshop and training was conducted for all Community Resource Management Committee (CRMC) members (See attached pictures).

ACTIVITY 2: ETHNO-BIOLOGICAL DATA OF LAKE BOSOMTWE CATCHMENT AREA

Faunal Species Richness and Diversity

We recorded the presence of at least 19 species of mammals during the surveys across the three main habitat types (Farm bush, Plantation forest and Natural forest). Species richness was highest in the Natural forest where at least 12 species were found to be present (Table 1). Species richness was lowest in the Farms-bush even though 13 species were recorded for this area.

Table 1: Richness and diversity indices generated by EstimateSWin7.5.0 for land-use types

	No. of Species	**Richness Index**	**Diversity Index**	
		Jack 1 Mean	Shannon Mean	Werner
Farms-bush	13	12.64	2.07	
Plantation Forest	13	21.38	2.20	
Natural Forest	12	26.00	2.24	

* Diversity data are from transect counts. Higher numbers represent higher diversity.

Two species of conservation concern, the Pel's flying squirrel *Anumalurus Peli* which is listed as Data deficient (DD) and Tree pangolin *Manis tricuspi* which is Near threatened were detected during surveys. Three species, Bossman's potto *Periodictus potto*, African civet *Viverra civetta* and Red Headed Forest

Squirrel *Epixerus ebii* are listed in the First Schedule under the Ghana Wildlife Conservation Regulation, LI 685. The species are wholly protected in Ghana; therefore the hunting, capturing or destroying of any species listed in their Schedule is absolutely prohibited at all times.

Encounter rates

Using tracks, footprints, feeding remains and other signs a total of 180 animal signs were recorded during 12km of transects (Fig. 1). About 47% of animal signs were spotted in the natural forest and 33% plantation forest. In contrast, fewer (20%) animal signs were recorded in the farm-bush mosaic.

Encounter rate for all mammals signs was 21.17 signs per km. Mammals were most often encountered in the natural forest and plantation forest than in the farm-bush. Average species encounter rates for the forest area (signs per km) in decreasing order ranged from maxwell's duiker *Cephalophus maxwelli* (5.58) to bossman's potto, Slender tailed squirrel *Protoxerus aubinnii* and grasscutter *Cricetomys gambianus*, all (0.25) (Table 2). The maxwell's duiker and bushbuck *Tragelaphus scriptus* were the most widespread in all the habitat types, with the black duiker *Cephalophus niger* representing the least abundant of all the duikers encountered (Figure 1 & Table 2). No activity of the Royal Antelope *Neotragus pygmaeus* was recorded across any of the sites.

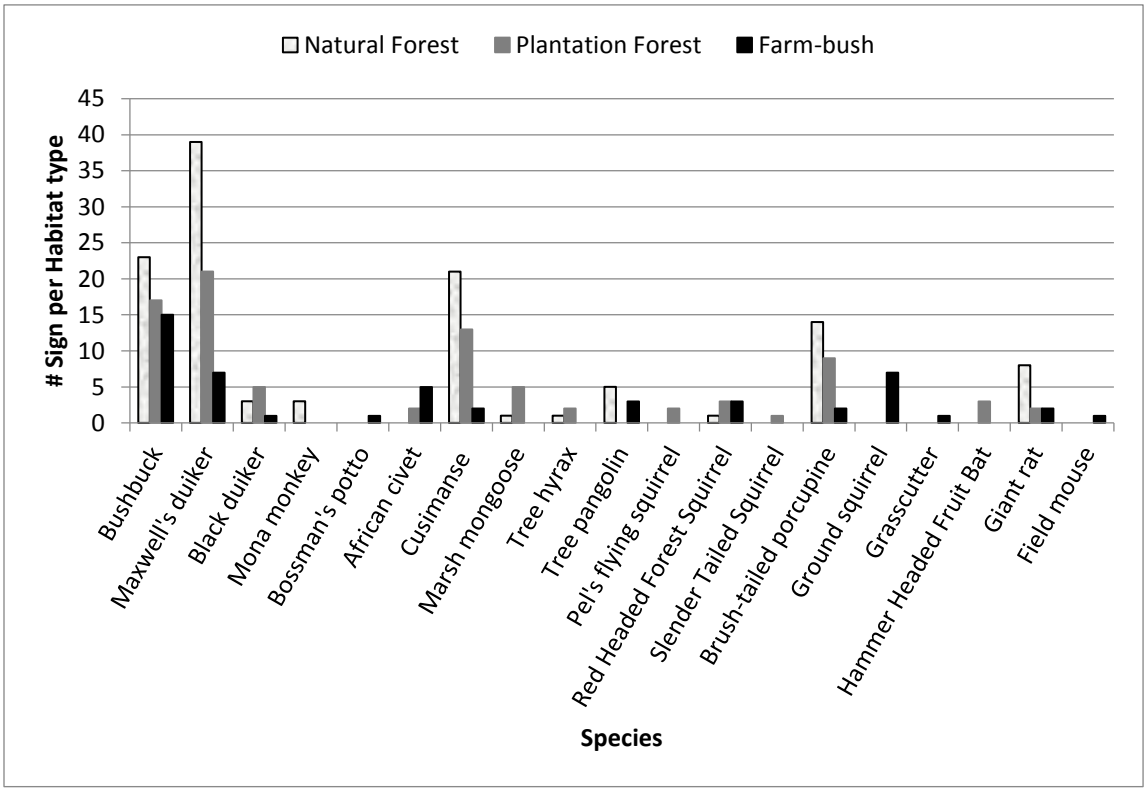

Figure 1: Abundance of animal signs recorded within various habitat types in the Lake Catchment Forested and Non- Forested areas.

Beside the Lowe's mona monkey *Cercopithecus lowei* whose presence was recorded in just the natural forest, no other species of diurnal primate was encountered. However, the bossman's potto, a nocturnal

primate was spotted in a remnant patch of secondary forest vegetation within the farm-bush habitat type. Signs of the Pel's flying squirrel were found only in the plantation forest. A nile's monitor lizard *Varanus niloticus* and Serrated Hinge-backed tortoise *Kinixys erosa* was recorded opportunistically during the surveys. Common carnivores across the three habitat types were Cusimanse mongoose *Crossarchus obscures*, while signs of the Marsh mongoose *Atilax paludinosus* were recorded close to flowing streams and rivers in the forest.

Respondents' response on the presence of prelisted mammals

Based on respondent's responses during interviews, about 23 species of medium to large mammals occur in the area (Appendix 1). The team did not record any large carnivores during field walks, however respondents indicated the palm civet (*Nandinia binotata*) to be present in the area. Of the forest monkeys, there is a good possibility that the Spot-nosed monkey (*Cercopithecus petaurista*) still occurs in the area. Other mammals believed to have gone extinct locally because of the last sighting period include the Giant forest hog (*Hylochoerus meinertzhageni*) and the Bay duiker (*Cephalophus dorsalis*) whilst the Red river hog (*Potamochoerus porcus*) and Olive colobus (*Procolobus verus*) follows closely on their heels due to their rarity locally. Species perceived to be still abundant in the area are the maxwell's duiker, Cusimanse mongoose, Brush-tailed porcupine (*Atherura africana*) and Forest genet (*Genetta pardina*).

Floristic Diversity

Twenty-six tree species were recorded. Details of data analysis on floristic diversity within the different zone types and star ratings will be presented in the next progress report when the analysis is completed.

Ethno-medicinal data

Within the Lake Bosumtwi catchment, 90% of the plants used for medicinal purposes were wild grown herbs, trees, shrubs and climbers. These are often not difficult to find as they grow on farmlands or in backyard gardens. Most of the herbs were seasonal, abundant during the rainy season and scarce during the dry season except those that grow along water bodies. Though 90% of respondents used them, 60% indicated that due to land degradation, medicinal plants particularly herbs needed to be conserved as they were currently difficult to obtain particularly in the dry season. Depending on the ailment, mostly, leaves were used to prepare medication and were collected by hand picking. There was no method of storage for herbs as only quantity required to prepare the medicine was collected. For tree species, plant part that was used for medicine includes the bark, leaves and/ or roots. The bark of medicinal tree plants could however, be stored by sun drying. Some medicinal tree species had multiple uses such as for food and medicine. For instance, a pear tree; fruits are eaten as food and the leaves when mixed with palm fruits for soup was said to facilitate breast milk for lactating mothers.

Method of preparation: for disease like fever, measles, headaches and stomach pains were boiling a combination of herbs and orally administered often with no specific dosage applied. For ailments such as boils and snake bites preparations involved grinding a combination of herbs of leaves and apply externally to affected part. Caution was however given for some tree species which though medicinal could be dangerous depending on the condition of the patient. For instance, tree species such as African nutmeg (*Pycnanthus angolensis*) locally known as Otie have the tendency to cause miscarriage and thus are not suitable for pregnant women. In some cases people use them to abort pregnancies. Other uses:

tree species like mahogany, were used as timber and for firewood whiles fruit species like cocoa were main cash crops. See attachment for table of ailments and how they are treated.

ACTIVITY 3: CONSERVATION EDUCATION AND WASTE MANAGEMENT

A team of about 50 university students from Kwame Nkrumah University were recruited and trained in conservation education protocols by Maeli Cooper (Environmental education specialist from Australia). They were taken through different thematic areas of concern to Lake Bosomtwe. The constituted team was distributed in communities to undertake education using house-to-house, one-on-one, and group discussion approach. Also, different community information centre radios were used for the purpose of conservation education. The conservation education set the platform for the waste management activities.

Waste management along the lake started with community consultative meetings to profile community refuse dumping sites in relation to the lake. All communities with refuse dumps impacting the lake negatively were identified and mechanisms agreed to relocate dump sites. Pertinent to CRMCs deliberation, priority communities with high level of waste generation, visitor numbers, etc were selected and marked for intensive engagement. Within the marked communities, waste management education was specifically intensified. Also, big size waste bins were provided for community prioritized sites. About 30 big size waste bins have been provided for 6 priority communities (Abono, Duase, Ankaase, Obo, Abrodwum, Nkowi). To further enhance the solution-based waste management action. About 500 different posters with varying simplified messages has been made and distributed to all communities.

Posters placed at vantage points within the communities

ACTIVITY 4: LIVELIHOOD ENHANCEMENTS

The UNESCO funded project trained about 904 rural communities members in four community determined intervention areas (Beekeeping, Grasscutter rearing, Snail farming and Mushroom farming). The project however was unable to give all trainees start-up. It supported about 300 persons with start-ups in the intervention area. This project has further contributed to recruiting more of the trained persons and start-ups provided to them. So far, 30 persons have been given beekeeping and snail farming start-ups.

Beehives

Grasscutter

OTHER OBSERVATIONS ON THE PROJECT

Gender issues were earmarked as an area requiring attention since very few women were represented during the community meetings and on the list for the proposed CREMA committee. The team rectified this by calling the attention of communities to include women.