QUARTERLY PROGRESS REPORT
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WESTERN KENYA INTEGRATED ECOSYSTEM MANAGEMENT PROJECT

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1. Introduction

Western Kenya Integrated Ecosystem Management Project (WKIEMP) has been initiated with support from the World Bank for implementation through a grant from the Global Environment Facility (GEF). The project, which became effective in July 2005, seeks to improve the productivity and sustainability of land use systems in selected watersheds in the Nzoia, Yala and Nyando river basins through adoption of an integrated ecosystem management approach. In order to achieve this the project will: (i) support on-and off-farm conservation strategies; and (ii) improve the capacity of local communities and institutions to identify, formulate and implement integrated ecosystem management activities (including both on-and off-farm land use planning) capturing local global environmental benefits. The project is based in Kisumu and is achieving its objectives through a community driven development process whereby communities decide on resources for infrastructure investments, technical assistance and implementation of ecosystem management activities.

2. Bio-physical baseline

The biophysical team completed the survey of the remaining blocks in Nyando River basin (Middle and Upper). In the Upper Nyando block, the landscape is made up of foot slopes, plains and step slopes. Prior to the 1970's the area was largely woody grasslands and conversion to agriculture began after independence in the early 1970's. Today, the landscape has been cleared of most of the woody vegetation and the land is mainly used for farming maize. Some farmers have wheat fields and vegetable gardens of cabbages, onions, kale and pumpkins. Pyrethrum farms are also seen in this area and many farmers rear improved livestock. The population density in the block is sparse. The following trees, are seen in the area: *Acacia lahai, Acacia abyssinica, Acacia hockii, Albizia spp., Erythrina spp., Olea africana, Juniperus procera, Cussoria holistii.* Shrubs include *Grewia bicolor, Grewia similis, Euclea divinorum, Rhus natalensis, Vanguaria spp., Dombeya spp., Rhamnus staddo, Carisa edulis, Rubos keniensis, Blephorispermum spp.,* and *Myterus hetrophylla.* The dominant grasses are: *Seteria sphacelata, Hyparrhenia variabilis, Evagrostis aspera, Cynodon dactylon.* A few exotic trees such as *Eucalyptus spp., Pinus patula, Cupressus lusitanica* and *Grevillea robusta* can also be found in the block.

Most of the Middle Nyando block spreads into Nyando district in Nyanza province and Kipkelion district in Rift valley province. Formerly the area was primarily wooded grassland with indigenous trees and natural grasses before the conversion that took place when the white settlers settled in the area in the early 1900's. Until 1967, about half of the land was under coffee plantations. Mid slopes and foot slopes were left for dairy ranching and the plains were under arable cropping – mainly maize farming. The land use changed as the white settlers left and most of the area turned to sugarcane growing. Muhoroni Sugar

Company is the main buyer of the crop. Coffee growing continued only in the Northeastern corner of the block. Coffee is processed in small factories in the area and taken to Thika town for grading and packing. Subsistence farming is also widespread which consists primarily of maize and beans. There are few planted trees *Eucalyptus ssp, Cyppresus incitanica, Grevellea robusta* and *Casuarina equisetifolia*, but these trees are planted in homestead and along the boundaries. Most of the indigenous trees have disappeared and all what is seen are remnants in small thickets on hill tops and sloping areas. The common species found in the area are: *Acacia percisiflora, Teclea nobilis, Rhus natalensis, Rhus vulgaris, Euclea divinorum, Albizia ssp, Dodonea augustifolia, Grewia similis, Grewia bicolar, Markhemia lutea, Terminalia brownii, Cordia momica, Vangueria acutiloba* and *Bridellia micranthus.* Shrubs are still found in higher altitudes in small thickets on top of hill slopes scattered within the block and cultivation forbs are found in cultivated field on mid slopes and few plain areas. Cultivation forbs include: *Leonatis neptofolia, Justicia vulva, Tagets pilosa, Othosipon spp, Amaranthus spp* and *Belium basilicum.* Creepers found in the block are mainly Rhynchosia ryasica and Cyphostema spp. Natural grasses are both annual and perennial in this area. These grasses are both palatable and unpalatable for livestock, while other species are of little importance for grazing mainly used for roof thatching. The dominant grass species in the area are: *Commelina africana, Brachiaria spp, Digitaria gazeasis, Eragrostis aspera, Cynodon dactylon, Panicum maximum* and *Hyparhenia spp.*

3. Socio-economic baseline

The socio economic survey has been completed for the Nyando and Yala river basins. Data entry is underway at KARI and analysis will begin as soon as the databases are ready.

4. Species screening trials

4.1 Lower Nyando

The survival count and tree growth assessment were done in November. All plots are looking doing well in this block and no farmers are reporting problems. Data analysis on these trials is beginning, but preliminary results show good survival rates for all species (see table).

Table 1. Species survival in Lower Nyando screening trials.

Species	Survival (%)
Acacia gerradi	81.3
Acacia passiflora	76.4
Acacia polycantha	88.6
Markhamia lutea	80.3
Terminalia brownie	79.7
Grevillea robusta	83.8

4.2 Lower Yala

The survival count and tree growth assessment were done in November. Some problems with wilting have been reported on *Senna siamea*. Examination of the stricken plots by ICRAAF team members have shown that the wilting trees have been attacked by stem-borer. All the stricken trees are being grown in close proximity to bananas and it is likely that the stem-borer could have come from the banana. Thus, for the time being the project should not promote *Senna siamea* for locations in close proximity to bananas. Walter Adongo is consulting a pathologist from the Maseno University. Data analysis on these trials is beginning, but preliminary results show good survival rates for all species (see table).

Table 2. Species survival in Lower Yala screening trials.

Species	Survival (%)
Albizia coriaria	91.8
Croton dichogamus	97.2
Croton macrostachyus	86.1
Croton megalocarpus	82.6
Makhamia lutea	94.2
Senna siamea	95.4
Terminalia brownii	89.8
Grevillea robusta	92.4
Casuarina equisetifolia	74.8

5. Degraded site rehabilitation trials

The nursery at ICRAF Kisumu produced 7,000 seedlings of assorted species. These seedlings were planted in the short rainy season in the Lower Nyando block. Several sites were identified for planting of degraded areas: Lower Nyando. The target groups met regularly with the ICRAF team and discussed progress and future plans.

- **Kowala:** The Kowala group is working well. The second survival count was carried out in November; results are being analyzed.

- **Kalacha:** The Kalacha is working well. The second survival count was carried out in November; results are being analyzed.

- **Kokoto:** The Kowala group is managing their degraded area very well. Walter Adongo has met with group (October 26th) to discuss fruit tree grafting. He assessed the materials available and will organize for the training in the coming weeks. The second survival count was carried out in November; results are being analyzed.

- **Nyando Kokumu Aora Gulley:** This is a new site for the project. Survival count was carried out in November; results are being analyzed.

6. Other activities

6.1 Preparation of maps

The ICRAF team has been preparing maps showing baseline data collection points as well as the randomized points along with maps showing interventions. Maps for the preliminary baseline reports are also being prepared. ICRAF is still waiting for the GPS points for KARI activities so that they can be converted to the right format by the ICRAF GIS specialist in Nairobi.

6.2 Visits

Visitors from the Clinton Foundation and Care International / CARE Kenya came to see ICRAF activities in Western Kenya on October 23rd. The team also visited the WKIEMP project and the community groups in Kowala, Kalacha and Kokoto as well as the Katuk Odeyo gully.

A newly appointed post doc at ICRAF Nairobi office came for a visit on October 8th. First he joined the biophysical baseline team for 2 days. On Wednesday he visited the Lower Nyando block. The purpose of the visit was to familiarize himself with the baseline data collection since he will join the team in Nairobi analyzing the soils collected in the WKIEMP project.

6.3 Meetings

On October 12-13th ICRAF participated in the Professional Group Workshop on Environment Management and Land Development held at Maseno ATC. Luka Anjeho represented ICRAF and gave a presentation of the ICRAF activities within the WKIEMP project. Presentations were also given by ViAgroforestry, NEMA, and MoA. The outcome of the meeting was that field trips should be organized to see which activities are taking place in the Nyanza Province.

6.4 Data entry & GPS points

Data has been entered for bio-physical survey for the Middle Nyando block and ICRAF has in this meeting shared a CD with KARI containing the following data:

- Biophysical baseline data for Lower and Middle Nyando, the entire Yala basin and Lower Nzoia
- Socio economic data for the Nyando and Yala basins and Lower Nzoia
- Screening trials data for Lower Nyando and Lower Yala blocks
- Corrected GPS readings for the above mentioned databases

6.5 Soils lab

Work in progressing well in the soil lab. The following soil samples have been sent to Nairobi:

Socio economic survey:	Middle and Upper Nyando
Biophysical:	Upper Yala

The team is working on the Middle Nyando soils for the biophysical survey, where after they will work on the Upper Nyando soils for the same survey.

6.6 Training

Friends of the Ketuk Odeyo Development Project has expressed interest in expanding the cultivation of fruit trees. Walter Odongo from the ICRAF team organized a training session for local trainers who will provide services to the group. The training session focused on grafting mangos and fruit tree management. Modalities for cost sharing in the operation were worked out with the community and thirteen sub-groups were established. Each group will grow twenty clones to develop a diverse base of planting stock for the community.