CGIAR Research Program on
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Institutional innovations in African smallholder carbon projects

Case Study: Sustaining Agriculture through Climate Change (SACC): CARE International

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Project's capacity to produce verifiable credits

SLM interventions implemented

The CARE Sustaining Agriculture through Climate Change (SACC) project is still in the design phase, and final decisions have not yet been made on methodologies that will be used, but interventions will likely focus on tree planting. At one point, CARE was interested in using the Sustainable Agricultural Land Management (SALM) Methodology for the VCS developed by the World Bank Biocarbon Fund and piloted by Vi Agroforestry in Western Kenya. However, while CARE is still committed to selling credits within the VCS, it seems that they will opt for a better tested, easier to implement Afforestation/Reforestation (A/R) methodology instead. A likely candidate is AR-AM004 "Reforestation or Afforestation of Land Currently under Agricultural Use". Another idea that has been discussed is to use different methodologies in the two project regions (one in the lower and the other in the mid-Nyando basin) such that a VCS methodology is used in one with an alternative, more flexible, approach in the second area. It has not yet been determined who will play various monitoring roles but this is being discussed.

If this A/R methodology is selected, the menu of interventions for farmers will likely include boundary planting, dispersed interplanting and woodlots. While cropland soil carbon will not be part of the carbon measurement methodology, CARE does plan to include agricultural interventions, along with treeplanting, in project-related extension systems. These practices could include minimum tillage, improved fallows, crop diversification, composting, biochar, terracing and other soil and water conservation practices.

Project targets

The project will be built on a previous initiative in the area, the Western Kenya Ecosystem Management Project, a World Bank project supported through a GEF grant executed by KARI and ICRAF ran from 2006-2010. This SLM extension and research project supported on and off-farm conservation strategies throughout the Nzoia,Yala and Nyando basins. The project has achieved a reduction in soil erosion by 3 times, biodiversity protection and conservation and 16.5 tons of CO2 sequestered per year.

The proposed area for the SACC project will be in the middle and lower Nyando river basin (see Figure 1). This region is under increasing ecological stress from rising populations, deforestation, reduced soil fertility and overgrazing. The primary business in this area has been charcoal burning, but fuelwood needs are rising as supplies are dwindling. The project area was once the site of sisal plantations of white settlers, but Kenyan farmers, beginning around 1966, have since taken over the land with mostly maize-based small farming systems. In the lower Nyando (no specific data for the mid-Nyando), the average farm size in the area is 1.5 acres and a quarter of households have less than 1 acre. Farmers have not tended to plant very many trees on their land.

During the pilot portion of the project, a two-year period, the project will be engaging 500 households in each of 2 blocks, one in lower Nyando and the other in mid-Nyando. During the 4 years following the pilot stage, the goal is to upscale to 10,000 farmers. The project has set a goal of 100,000 farmers by the end of the project.

By 2035, the project expects to have covered 101,000ha, sequestering a total of 3,337,710 tCO2 with the total revenue of the life of the project (assuming a US $10 per VCU price) of US$33,377,100. This assumes an initial 30% buffer with a 15% buffer release after successful verification. (See Table 1).

Table 1: Projected ha planted, carbon sequestered and potential income

Year	Cumulative Area Planted (Ha)	Combined total Cumulative Carbon (tCO_2)	Potential total income based on $10/VCU
2015	**11,000**	6,678	**66,780**
2020	**41,000**	177,344	**1,773,440**
2025	**71,000**	865,248	**8,652,480**
2030	**101,000**	1,969,161	**19,691,610**
2035	**101,000**	3,337,710	**33,377,100**

Actors for the implementation of carbon-friendly SLM practices

CARE and AGRILIVE

CARE will be the organization that coordinates extension services and training on SLM practices, primarily tree planting, during the pilot phase of the project. However, over time they plan to devolve responsibility to a local entity. Although neither the short nor long-term project management structures have been finalized, it is likely that the pilot phase, at least, will resemble the structure of the Agroforestry for livelihood enhancement (AGRILIVE) project, a development/research initiative, begun by CARE and ICRAF in 2008 which is currently being implemented in two 10x10 km blocks in lower and mid-Nyando. The project is set to run for a total of 3 years and lead to the planting of 300,000 trees. The carbon project will be working within the same 10x10 plots, but with different farmers.

For AGRILIVE, CARE provides common agroforestry tree seedlings in addition to fruit tree seedlings including pawpaw mango, avocado and passion fruit. (CARE tried to introduce indigenous trees, but the most popular trees are Gravilia because they occupy a relatively small amounts of space, grow very fast, and the livestock don't eat it.) CARE also provides trainings that have focused primarily on nursery establishment and management, but, at times, they also cover manuring, pruning and sowing seeds. In addition to on-farm extension, CARE has organized a farmer's field day at the end of each growing season becomes a major training activity for tree planting and high value crops. CARE provides seedlings for the nurseries as well as polyethene bags for the nurseries. The community contributes land, water buckets and labor for preparing the beds.

AGRILIVE has also introduced high value crops in an attempt to provide an immediate impact for farmers, while trees take longer to generate livelihood benefits. These crops include onions, watermelon, green grams and tomatoes. In addition to these crops being immediately marketable, CARE sees these as adaptable to future changes in climate.

The following subsection describes the AGRILIVE extension structure. The carbon project will likely use it as template.

Training of trainers system

CARE works first to identify groups to work with, and the group selects their *trainers*. The primary responsibility of the trainers is to provide information and perform demonstrations to group members on treeplanting and management. Trainers may also receive training in group dynamics and leadership. The ideal ratio of farmers to trainers is 5 to 1. Each group (see following sub-section for a discussion of *groups*) is expected to have at least 4 trainers. (The goal is that within the pilot project working with 1000 farmers, there would be at least 200 trainers.) Although CARE interacts primarily with the trainers and other group leaders, it has the opportunity to engage group members directly during periodic review meetings with all group members.

CARE field officer

The CARE field officers provide trainings on data collection, report writing, and group dynamics. They interact primarily with farmers indirectly by training the trainers through their representatives at group and cluster levels.

<u>Groups</u>
CARE seeks out groups to work with that are already formed. There are between 15 and 40 members in each group. Some of these are registered and some are not. Many of these groups began as microsaving groups, and some already implemented agricultural activities. Group meetings occur bimonthly or monthly. Field officers may visit these groups to conduct trainings.

<u>Clusters</u>
Groups are organized into clusters, with 3 to 5 groups in each. These are the primary points of interaction for project field officers These intensive trainings may take three days to a week and refresher courses are held at least twice a year. Clusters meet quarterly for review meetings in which leaders from the clusters' groups attend to share information on the number of trees planted and how the trees are managed. Each of the clusters manages the nursery. Clusters are created for use of training because farmers between groups can be quite spread out.

<u>Blocks</u>
AGRILIVE is composed of two blocks, one in the lower and the other in the mid-Nyando. In the pilot phase, the project will work with 500 farmers in each of the two blocks. (1000 total)

Project management capacity

Organization of project participants

Project developers: CARE and ICRAF

The SACC project is being developed by CARE International, CARE Kenya and the World Agroforestry Centre (ICRAF) and the details of the design and implementation of the project are still under discussion. CARE had been working in the Nyando basin as far back as 1986. In addition to agroforestry, CARE implements activities on agriculture, health, water, sanitation and microfinance. The primary role of CARE is skills training, mostly organized through training of trainers (TOT) systems, as discussed earlier. CARE will take on project management responsibilities during the project's pilot phase, although they have yet to hire the project staff.

ICRAF also has been a long-term presence in the Nyando basin. They are conducting the baselines for the project and will be responsible for the research component of this project. A learning agenda has been developed that will be applied not only to this project and other CARE initiatives, but to the pro-poor carbon finance community as a whole.

Long-term project proponent

CARE does not see itself as the project manager throughout the life of the project. Therefore, one of their most important roles is to identify a local institution that will have the ability to take over the project once it is established by CARE. Although CARE is years away from finding a partner to manage the project. They have begun internal discussions considering the types of institutions that might be available to work with. These include local NGOs, farmers groups, and private businesses operating in the area.

Government partners

The project will cross administrative boundaries, and will likely have many government partners. The pilot project is working closely with the Ministry of Agriculture and the Ministry of Livestock. There will be 1 crops officer and 1 livestock officer in each of the blocks with which the project can coordinate.

Research partners

Along with ICRAF, CCAFS has been involved in developing the research questions for the Jan 2011-June 2012 piloting phase of the project. CCAFS, along with ICRAF and CARE conducted the Lower Nyando Household Survey and compiled preliminary findings that were presented in January 2011. Other Kenyan research partners will include KARI and the Victoria Institute for Research and Environment.

NGO partners

In the lower Nyando block, there is a relatively large presence of NGOs, with fewer in the middle Nyando block. Potential partners include World Neighbors and Vi Agroforestry.

Groups, clusters and blocks

See the previous section for descriptions of groups, clusters and blocks.

Funder

The Rockefeller Foundation is funding the two years of the piloting phase of the project as part of its Carbon for Poverty Reduction initiative

The project process and timeline

Pilot phase of carbon project

As part of the pilot phase of the project, a baseline study is now underway. The goals of the baseline are to identify target areas, the place of soil carbon in the project, the carbon accounting approach, the carbon baseline, and which agroforestry and conservation agriculture practices will be highlighted. A socio-economic baseline has also begun in lower Nyando. Data collection at the household level has been completed, and work at the community level will be completed shortly. This baseline does not include an analysis of higher-level institutions. A baseline has yet to be conducted in the mid Nyando.

As described in the previous section, the pilot phase of the carbon project will likely replicate the approach of AGRILIVE. The carbon project will be working within the same 10 x 10 km block, but with different farmers so that the project can claim climate change mitigation additionality.

Phases of the project

Phase 1: Last half of 2010 (6 months): project preparation and scoping
Phase 2: (22 months): This pilot phase will include baseline development, project design, methodology identification, small-scale implementation with roughly 1000 farmers. The carbon project planning began in earnest in January in Nairobi at the Inception Review and Planning workshop for *Making Carbon Finance for Sustainable Agriculture Work for the Poor in Western Kenya*. This workshop included the development of research questions as well as a work plan for the period of January 2011 through June 2012.
Project is currently in the process of collecting carbon and socio-economic baselines.
Phase 3: (4 years): Upscaling to reach 10,000 households
Phase 4: Upscaling to reach at least 100,000 households

Project management capacity

Staff for the project has not yet been hired, but it is likely that CARE Kenya will play the day-to-day management role and that the project will be led by a member of the staff in Nairobi who has been working to date on agroforestry and PES, and an assistant manager will be based in Kisumu and run the day-to-day activities of the project. There are plans to hire 2 field officers for the project, one for each block of 500 farmers. CARE International and ICRAF will support CARE Kenya with technical support.

Community structure and governance

As previously discussed, the carbon project plans to reach scale by interacting with groups of 15-40 farmers, many of which are previously existing and organized originally for other purposes. The success of the project will rest on the strength of these organizations. The following sub-sections are examples of two groups with which CARE is already working.

Amani group
This group began in 2009, and now has 18 members: 8 women and 10 men. The mission of the group focuses on treeplanting, but group members didn't have the resources or training to plant. Members had previously been part of similar groups, but they collapsed. The group was reconstituted when CARE arrived to offer training. Amani now manages a tree nursery and have also initiated activities on cabbage cultivation, local poultry, dairy keeping and marketing. Some farmers have also planted bananas, pawpaws and tomatoes.

Enuka group
This group started in 2008, and now as 18 members, 10 women and 8 men. This group started as a revolving loan group, and added treeplanting with the support of CARE. Group members now grow tree species og gravilia, sesbania, casualina, lucina, caliandra, cyprus, mangos and avocados in a nursery that they manage. Before CARE came in the government had encouraged people to plant more trees, but people were afraid that trees would drain soil water from their small plots. This hurdle seems to be overcome.

Key policy issues

Land tenure

In the Lower Nyando land his been adjudicated but most people don't actually have title deeds to their land. The mid-Nyando was the site of a settlement scheme in the 1960s and most have title deeds. Land is leased in both areas, but trees are normally not planted on leased land.

Carbon Rights

International rules do not stipulate who has the right to benefit from sequestered carbon or emissions reductions. Policies on this topic are left to the host country. Although many countries have yet to address the legal status of carbon, Kenya already has some experience with this issue with a number of land use carbon projects in operation.

Gender

For about a quarter of households, women are responsible for most of the work on food crops. While women are involved in the planting of trees, men often own them. Men control land and associated resources in most situations and women have no rights to ancestral lands. The choice of trees may affect the distributional impacts of the project with men more interested in trees for poles and women having a preference for fodder trees, fruit trees and those that they

can trim for fuelwood. It is anticipated that cash from carbon sales would flow to men if the project doesn't implement mechanisms to create a more equitable distribution of benefits.

Gender in decision making

CARE plans to create a project in which women and men are equally involved in decision making. Men and women participate equally in project planning meetings. During the biodiversity and social-economic baseline surveys, questions were addressed to both women and men to seek their opinion on how they relate to natural resources, particularly trees. In households in which there are two parents, efforts will be made by CARE so that they are equally involved in contract management. If a there is a single parent household headed by a woman, she will be in charge of the project contract. CARE recognizes the need to continue encouraging women to participate in the project and to ensure that their perspectives are heard during meetings and that their ideas are incorporated.

Gender and benefits

Women are considered to be equal partners in the project and efforts will be made to ensure that they benefit equally. Some trees are controlled by women and others by men. There are plans to promote trees which are which are controlled and managed by women (e.g. Lusina)
CARE is considering on option in which contracts would include the names of the female and male heads of the household and decisions and payments would require authorization by both. Another idea (borrowed from another CARE PES project in Naivasha) being considered is that payments will be made using vouchers to a specific store and the female and male heads of the household will be are required to authorize the vouchers for purchase.

Interaction with landscape-scale processes

CARE and ICRAF set a goal two years ago that they would like to cover the whole Nyando river catchment with restoration activities. CARE and ICRAF are currently leading this effort as there is no catchment-wide committee, and they are not working with any government agency to coordinate.

Institutional challenges and solutions

Project challenges and solutions

Identifying long-term project managers
Challenge: CARE plans to devolve project management responsibilities to a local entity. This group must be identified and trained during the early years of the project.

Solution: CARE will begin to identify potential partners during the development and piloting stages of the process, and make significant investments in engaging and training these partners.

Uncertainty in carbon markets
Challenge: This project is being development within an environment of significant uncertainty in international carbon markets. Carbon prices are low and it is not clear what will happen after the first Kyoto period ends.

Solution: Developers should proceed cautiously and take care not to raise farmers' expectations on payments. There may also be opportunities to sell credits at premium prices by meeting certification standards such as the Climate, Community and Biodiversity Alliance (CCBA).

Community/farmer challenges and solutions

Balancing food production with tree planting
Challenge: The primary mode of carbon credit generation in this project will be tree planting. This may create incentives for farmers to maximize carbon sequestration by converting land to carbon maximizing trees at the expense of short-term food production, which could leave them vulnerable if they have unrealistic expectation regarding carbon payments.

Solution: Farmers must understand that the primary benefits that they receive from this project will be co-benefits and not carbon payments. From this principle, choices on species and placement of trees should be made to maximize food production and livelihoods as opposed to carbon sequestration. Ideally, the project can do both.

Distributional gender impacts
Challenge:
There is a danger that, depending on the mode of training, payment mechanisms and tree species planted, project benefits could be steered towards men and reinforce gender roles that are often disempowering to women.

Solution: Gender impacts should be considered at all stages of the project, and women should be included in decision making roles at all project management levels.

Project innovations

The key innovation of this project is its plan to devolve project management responsibility fully to a local aggregator over time. Groups such as Vi Agroforestry plan to significantly reduce their involvement after an initial phase of intensive extension work, but CARE will move a step further and leave the project altogether. The development of a replicable model for such a complete exit strategy would be highly significant not only for other potential CARE projects, but for the field of agricultural climate finance in general.

Project finances and equity for farmers

The project costs and benefits

The initial calculations from CARE's financial model is that total investment in the project will need to be US$ 2.4 million, and that the Net Present Value of the project is US$ 3.9 million over 25 years and that the Internal Rate of Return on investment will be 16%.

The Rockefeller Foundation will be funding the pilot phase of the project, but it is not yet clear how the project's finances will be organized over the long-term. Carbon sequestration rates for agroforestry practices are low during the first five years after they have been planted, which is problematic from a financing perspective because at least half of the carbon credits will be VCS certified which means that credits will only be issued once carbon has been sequestered. Pre-finance must be secured through either direct financing from the project developers, loans or by forward selling of credits. Another source of uncertainty is the status of international climate negotiations, particularly the future of the Clean Development Mechanism (CDM).

The farmer's costs and benefits

Given the current price of carbon, the primary benefits to farmers for participating in this project will not be carbon payments, but improvements to agricultural production and resilience to climate change resulting from introduced SLM practices. In addition to yield agricultural improvements, farmers may also benefit from diversification of income, increased fodder and fuelwood, better developed farm management plans and improved group management capacity

Even though benefits for farmers will be largely agricultural, CARE is in ongoing discussions with partners on how best to organize payment mechanisms to farmers so that cash payments come to them as quickly and efficiently as possible. They see this as essential for encouraging farmers to keep trees in the ground through the period of maximum carbon sequestration which will last for the first 10 years. They are also considering ways in which adaptation funds can be used to provide financial support for project activities.

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Interviewees

Name	**Position/title**	**Organization**
Geoffrey Onyango	AFOLU Advisor	CARE International
Robert Makayo	Field Officer	CARE Kenya
Njoronge Maina	Project Manager	CARE Kenya
Phil Franks	PECCN Coordinator	CARE International
David Matengo	member	Amani group
Joseph Ngowe	member	Amani group
Nelson Juma Orende	member	Enuka group
Gaudensio Auko	member	Enuka group
Dorokas Oteno	member	Amani group
Flavia Alaro	member	Amani group
Moses Ouma	member	Amani group
Alter Odago	member	Amani group