THE GAMBIA ECOLOGICAL AGRICULTURE DEVELOPMENT PROJECT

Semi-Annual Report

July 15, 2004

Presented to

Environment and Sustainable Development Program
Projects and Innovation Unit – Canadian Partnership Branch
Canadian International Development Agency

Submitted by

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In partnership with

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Njawara Village, North Bank Division, The Gambia

The Gambia National Agricultural Research Institute (NARI)
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1.0 Project Proponents and Collaborative Agencies

Project Proponents:

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REAP-Canada is an independent, research, education and development organization based in Ste-Anne-de-Bellevue, Quebec, Canada. REAP has 18 years experience working with farmers, scientists and the private sector to create greater sustainability in farming systems to advance rural development, both in Canada and abroad. REAP-Canada has been working on Agro-Ecological Village (AEV) and rural development with Philippine partners since 1997 in projects sponsored by CIDA and USAID, and since 2002 with the government of China sponsored by the Shell Foundation. The organization has a leading expertise in working with communities on sustainable farming and renewable energy systems development through participatory on-farm research and development, and capacity building through the support of farmer-to-farmer training networks. In 1999, REAP-Canada was awarded by the Canadian Environmental Network, The International Environment Award for excellence in programming under the theme of Climate Change mitigation.

Njawara Agricultural Training Centre (NATC)
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Njawara Agricultural Training Centre (NATC) is a non-governmental organization established by the Njawara community for the purpose of training farmers in sustainable agro-forestry techniques to improve farm production and profitability while promoting sustainable natural resource management. Since 1990, NATC has worked to develop its in-house training capabilities and now has a relatively large compound for residential training with 6 hectares of sustainable agriculture demonstrations. Their flagship project is a Farming System Training Program (FSTP) for short-term adult training and long-term youth training where farmers spend up to nine months in training at the institute. The 6-hectare site includes training areas and demonstrations for nursery establishment, soil fertility and management, live fencing, gardening, orchard and woodlot management and small animal husbandry. Through the GEAD project, NATC is looking to expand its outreach to communities to compliment its current centre based training and plant material improvement programs.

The Gambia National Agricultural Research Institute (NARI)
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The Gambia National Agricultural Research Institute (NARI) is the Gambia's primary agricultural research and development institute focusing on the advancement of livestock, horticulture, agronomy and agro-forestry systems. NARI recognizes the high cost of the

traditional extension systems for agricultural research and development existing in the Gambia and is interested in continuing to develop its experience with participatory approaches for plant material improvement as a strategy to increase its impact in the country. It is presently supporting the Participatory Learning and Action Research (PLAR) approach for rice improvement in The Gambia. Through years of research and extension, NARI has a developed understanding and resources to support plant material improvements in rural communities in the Gambia. The involvement of NARI's agricultural scientists in the partnership will provide an additional level of technical capacity building to the Farmer-to-Farmer training networks being established.

Collaborative Agencies:

Based in the Lower Saloum District of the Central River Division for the past 17 years, Village AiD- The Gambia (VATG) is the only international agency operating in one of the most impoverished areas of the Gambia. Its program began with infrastructure development projects and has expanded to food security and literacy and gender development programs. VATG targets the development of marginalized communities in the Gambia through integrated, self-supporting programs such as REFLECT literacy circles, the Village Action Fund micro-finance scheme and agricultural development through the support of small-scale community gardens. REAP-Canada is developing its ESDP partnership with Village Aid and will have two CIDA Youth interns based at the organization for six months each over the next two years. VATG will assist NATC and NARI in project activities in Lower Saloum.

Support from other government units will assist the projects development and contribute to local capacity building. The local Multi-Disciplinary Facilitating Teams (MDFTs), which consist of governmental and non-governmental extension workers, will be used to co-facilitate group discussions or PRA's in the targeted communities in CRD. Additionally, the Social Development Fund (SDF) and Rural Finance support the construction of wells and community gardens and are active in micro-credit programs, including the nation wide Village Savings and Credit Associations (VISACA's). They will be active in mobilizing resources for community infrastructure development. Finally, the West African Rural Development Project (WARD) and the Rural Development Institute (RDI) will also serve as potential development/agriculture training sites for staff and as a source of experienced PRA practitioners.

2.0 Local Context/Needs Analysis and Environmental Degradation in the Gambia

The Gambia is one of the most challenged nations on the globe. In the year 2002, the Gambia ranked 160th out of 173 countries in the Human Development Index (measuring indicators such as quality of life, life expectancy, education and income), with nearly 60% of the population below the international poverty line and the highest population growth rate in the world at 4.2% per annum. Gambia's economy is under-developed, as it has limited natural resources, a narrow economic base, and misused human resources. According to a 1992 study of poverty in the Gambia, 75% of the rural population experiences a chronic food deficit for at least 2 months of the year during the rainy season from July to August, when income sources are also scarce.

Crop production is the predominant agricultural activity in the Gambia, followed by animal husbandry, rice farming, and small-scale vegetable gardening. Crop production centers on the cultivation of millet, maize, and groundnut, and is mostly undertaken by men during the rainy season. Rice farming and vegetable gardening commonly occurs in the lowland regions and is the main responsibility of women. There is a compelling need to diversify farming in the Gambia. Nearly 75% of the rural population are subsistence farmers growing mostly groundnut, millet, corn, beans, rice, and sesame. The intensive cropping of peanuts by both small-scale and large-scale farmers has left the national economy vulnerable to international market fluctuations and resulted in serious food security and decline in soil quality. Since the 1970's, world prices for groundnut have rapidly declined, leaving Gambia's export industry in financial crisis. Because of this they have maintained a negative trade balance and continue to rely heavily on international aid organizations for social and economic development. With an emphasis on cash cropping, farmers have to use input-intensive farming practices in order to sustain yields. They also lack the food crops necessary to feed themselves and are therefore more reliant on capital in order to purchase food for personal consumption. The country as a whole is also becoming more reliant on food imports to feed its rapidly growing population. Diversifying farming systems in the region would increase food security for families and offer significantly more opportunities for the incorporation and full participation of women in all aspects of food production from planting to marketing and value added processing.

In a 1998 government study into strategies for poverty alleviation, 91% of extremely poor households were dependent on agriculture. Furthermore, many poor and extremely poor households were large in size, with 41.6% of extremely poor households housing 6-10 people. Larger households are normally associated with rural agricultural communities, where bigger families are encouraged to provide more hands for farm labor. The majority of women in the rural areas were found in a constant energy deficient state, caused by poor dietary intake, heavy workload, and a high disease infection rate. It is evident that women in the Gambia in particular have very difficult lives and the advancement of ecological agriculture is of paramount importance to improving their quality of life and restoring the natural resource base of their environment.

In addition to the dire social and economic conditions, the environmental quality of Gambia is in a long-term trend of ecological decline. Farm practices contributing to declining soil fertility include mono-cropping, planting up and down the slope, crop residue burning and leaving the fields fallow after harvest. Lack of soil cover and erosion control is also causing topsoil to be lost into watercourses during heavy rainfall events or by intense winds. Forests are being heavily denuded by the growing need for fuelwood, dry-season livestock forage harvesting, farmland development and the burning of agricultural fields. Free range sheep, goat and cattle rearing is also found throughout the Gambia and is devastating to the integrity of the countryside as it destroys crops and limits farmers cropping options, while also being destructive to permanent vegetation. Significant decreases in crop production (most farmers in the targeted communities are reporting half the productivity of 10 to 20 years ago) and increasing population pressure in the rural areas is leading to the early exhaustion of food stocks. Farmers are subsequently forced to search for income to supplement household food requirements for the few months leading up to the next harvest. This period is increasingly being known as the "hungry season."

A holistic and integrated approach is required to respond to these interrelated challenges of environmental degradation, diminishing natural resources, reduced agricultural productivity, rapid population growth, hunger and high poverty rates. New efforts are required to implement effective sustainable rural development models to respond to these problems.

3.0 Background for Phase 1

The Canadian International Development Agency (CIDA) provided funding for an Exploratory Phase Mission to the Gambia, which examined opportunities to create partnerships and strengthen the partners' current efforts in ecological farming systems and sustainable community development. In August 2003, the Executive Director and a Senior Project Manager from REAP-Canada met with NATC, VATG, farm leaders, and government officials in Gambia to discuss in detail how to advance ecological farming in the Gambia and to learn of the particular development needs of the local communities. REAP-Canada staff also had two days of meetings with Agronomy and vegetable research scientists at NARI in August 2003 to discuss opportunities for plant material improvement through participatory plant breeding and local adaptability trials in the NBD and CRD. In addition, since September 2003, two REAP-Canada youth interns supported by the CIDA Youth International Internship Program (YIIP) have been working in The Gambia to support programming, one with NATC and the other with Village Aid with four more to be stationed at the two organizations over the next two years. Through the exploratory phase and internship program, the basis for a solid partnership has been established. The partners and local communities have made strong commitments both to build project activities that promote sustainable agriculture and community development and to learn and develop from each other. Each organization brings to the table unique achievements and areas of specialization that will bring positive advances to the international development community.

Conclusions developed through partner, beneficiary and stakeholder dialogue during the Exploratory Phase indicate that a holistic and integrated development approach is required to respond to the challenges in the Gambia including soil infertility, environmental degradation, and lack of income generating opportunities. Introducing diversified ecological farming systems would not only increase the soil's fertility but also enhance crop production, suppress weed growth, inhibit pests and diseases, increase food security, generate more income, reduce use of chemical inputs and improve the health and nutrition of farmers and their families. The local partners are currently working together with REAP-Canada staff and the local communities to develop activities that will support the development of ecological farming systems using the AEV Development framework. Future activities to assist the communities were agreed upon by the project proponents and beneficiaries; these include enhancing their existing training modules, establishing learning farms and plant improvement programs using participatory approaches, as well as aiding in farm planning and diversification and supporting farmer-to-farmer training networks. REAP-Canada has developed the *Agro-Ecological Village Model* to support rural communities through the creation of self reliant, integrated and ecological food and energy systems. This model has been successfully implemented by REAP-Canada and its partners in the Philippines funded by CIDA and in China funded by the Shell Foundation. The general characteristics of Agro-Ecological Villages appropriate for agrarian communities in the Gambia are outlined and compared to conventional approaches in Table 1.

Table 1. An Agro-Ecological approach to rural development		
	Ecological System	**Conventional System**
	• *Emphasizes self reliance & empowerment through maximizing on-farm resource utilization* • *Market development oriented towards import displacement* • *Minimizes human impact on local environment & biosphere*	• *Emphasizes export markets to pay for imported goods* • *Approach leaves communities vulnerable to external forces* • *Degrades natural resource base locally and increases greenhouse gas emissions*
Food Supply	Internal and plant based, emphasizing farm fresh production of in- season vegetables, rice, corn, root crops, fruit, fish and eggs	Food imported into community including rice (through loans), canned and dry fish, meat, pop, noodles, crackers, etc, imported livestock feeds
Soil preparation and on-farm hauling	Draft animals like donkeys which reproduce	Tractors that require maintenance and replacement, and are fueled with diesel and gasoline
N Fertility	Intercropping, nitrogen fixing legumes, azolla, mudpress, soil mineralization, donkey and horse dung	Purchased urea fertilizer
Minerals	Minimal erosion, recycling of rice hull ash and mudpress, donkey and horse dung, good soil structure	Purchase Potassium and Phosphorus fertilizer
Seeds	Community seed banking of open pollinated seeds, new seeds assessed in trial farms, ongoing on-farm plant improvement	Purchased hybrid seeds, no local adaptation trials, seeds derived from corporations, transgenic seeds being developed
Weed Control	Use of local organic treatments such as neem tree solutions, mechanical weeding devices, crop rotation, good soil fertility management, mulch farming	Herbicides and tillage
Insect control	Biological control strategies, resistant cultivators, balanced fertility	Insecticides
Disease Control	Resistant cultivators, diverse cultural management strategies	Fungicides
Irrigation	Modest requirement and efficient usage, provided by alternative water supply options	Gasoline/diesel powered pumps
Crop drying	Uses solar or biomass energy	Fossil fuel powered crop dryers
Marketing	Emphasizes internal self reliance first, then import displacement in local markets and value added processing	Monoculture production emphasized and sold to distant markets in the country or exported
Household cooking	Rice hull cookers, solar powered cookers, efficient wood stoves, biogas, all biofuels derived from the farm	LPG fuel stove, open fire cooking, kerosene as fire-starter, fuelwood gathered off farm or purchased
Electrical power	Low requirement, renewable sources explored if feasible	High requirement and from fossil fuel based mega-projects
Housing	Mud bricks, farm derived wood, rammed earth	Cement block housing

Central to the AEV approach is the conviction that ecological land management and sound community organizing form the basis for sustainable community development. This model emphasizes participatory development processes using a four-step plan (institutional building process, capacity building and training, farm planning, field level implementation). Over time, a community's adoption of an Agro-Ecological approach will:

- Provide farming families with food security, increased income levels and improved nutrition
- Enable more active participation of both men and women on farms and in local economies
- Increasing income generating opportunities in rural areas
- Ensure the long-term productive capacity of the land for food production
- Improve surface and ground water quality and quantity
- Reduce health risks to food producers and consumers
- Decrease greenhouse gas emissions through reduced minimized crop residue burning
- Help protect and restore biodiversity

In addition to improving the lives of farming families in Lower Badibu and Lower Saloum, the concept of the Agro-Ecological Village could also become the basis of a development model that meets the dual objectives of poverty alleviation and environmentally sound development in other regions. From our experience, this strategy has proved to be the logical evolution for rural development programming in agrarian areas.

4.0 Project Rationale

4.1 Project Goals

1. To introduce the Agro-Ecological Village (AEV) development model as a new approach for sustainable community development.
2. To train farmers on Agro-Ecological farming methods as a means to reduce poverty, enhance food security, increase self-reliance and reduce environmental degradation in some of the most impoverished areas of the Gambia.
3. To improve the plant material base for ecological farming of community gardens and farms in the NBD and CRD through a participatory plant material improvement program.
4. To encourage the development of gender-sensitive agrarian communities through participatory assessment, farmer-to-farmer training and on-farm research.

4.2 Project Objectives

1. In each community, to strengthen the farmer's organizations, complete an effective Participatory Rural Appraisal (PRA), begin a Participatory Monitoring and Evaluation (PM&E) program and utilize participatory processes and support gender development for all project activities.
2. To train farmer trainers in the NBD and CRD, establish a farmer-to-farmer training network in the NBD and develop ecological farming training modules to support the development of ecological farming systems in the Gambia.

3. To establish learning farms and gardens to introduce improved plant varieties of vegetables, field crops, grasses and tree species, and further develop ecological farming practices such as intercropping, sustainable livestock management and agro-forestry and appropriate technologies such as biofuel cookers and improved farm implements.
4. To complete ecological farm plans for individual households and assist communities in the development of the plans.

5.0 Project Beneficiaries

The project will directly reach approximately 150 families in the communities of Njawara and Kerr Ardo, located in lowland and upland ecosystems respectively. Several families usually live in one compound of up to 30 people; each family is housed in different units or rooms. As such targets and outputs will focus on the number family units involved. Projected activities in the two main villages will include farmer-to-farmer training and assistance for farm development and diversification. Other beneficiaries include approximately 500 farmers and their family members in three surrounding villages. They will have the opportunity to participate in sustainable agriculture trainings and represent their villages in committees formed to solve regional environmental issues such as the free range grazing problem. These include Torro Ba, Torro Tayam, and Panneh Ba. Please refer to Table 2 for village populations defined by recent Participatory Community Plans or interviews with villager elders.

Table 2. Village Populations of selected communities in the North Bank Division.

Village	*Njawara*	*Kerr Ardo*	*Torro Ba*	*Torro Tayam*	*Panneh Ba*
Population	852	1150	716	500	150

Additionally, the project will benefit the communities in the Lower Saloum District. Project Proponents are enthusiastically looking to increase activities in this area in the future with the establishment of an ESDP funded partnership with Village AiD. As such, some project activities will include basic agronomic developments in these communities similar to the interventions being made in Lower Badibu including the training of farmer trainers and the introduction of improved plant materials into community gardens and farms of leading farmers in the CRD.

5.1 Community Selection

Community selection took place before phase 1 approval. This was made possible through the relationship developed with southern partners during the exploratory phase and the REAP-Canada internship program in The Gambia. The following criteria were used to select the two beneficiary communities:

- Demonstrated need for increased food security and improvement of farming systems
- Internal organization and farmer leadership and proven dedication to improving economic situation, addressing gender issues, and the utilization of agriculture to address food security issues.
- Agricultural similarity and complementary resources and knowledge that can be shared between other villages

- Healthy relationship with other villages historically cooperating in regional activities.
- Secure land tenure and interest in improving the communal village area.

Village meetings in November and December of 2004 with representatives from each beneficiary community were used to familiarize communities with REAP and the AEV approach. Participants included members of the Village Development Committees in Lower Badibu, as well as village heads, local farmers, and other villagers. Participants were enthusiastic about the opportunity to develop farmer associations, participate in farmer-to-farmer training, and sustainable farming practices.

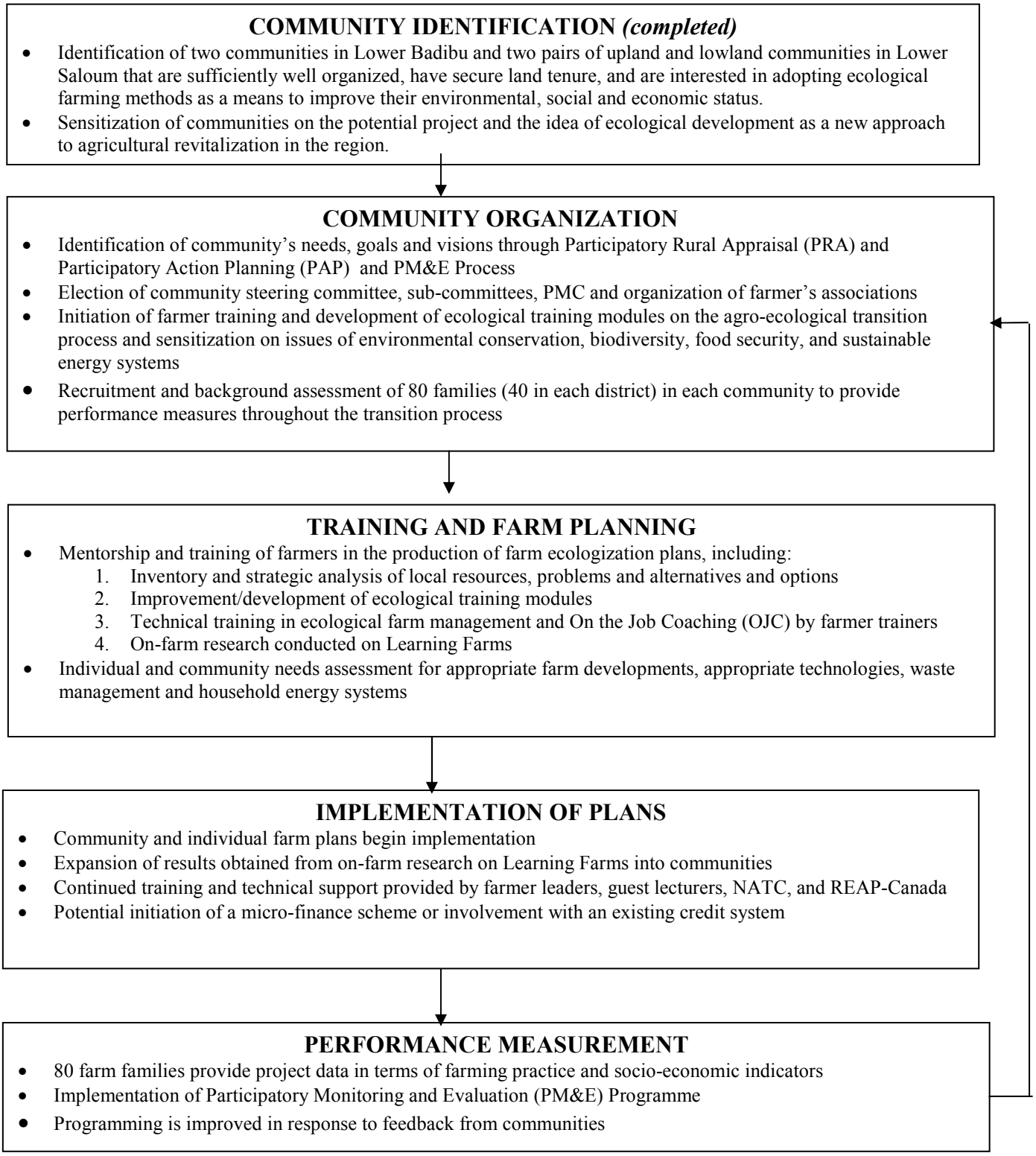
Njawara and Kerr Ardo were chosen as pilot communities in the Lower Badibu District. Both villages are located only a few kilometers south of the Senegal border, situated within the same watershed, and subject to similar Sahelian climactic conditions. Background information on the villages was obtained from the village meetings, interviews with villagers, the Njawara Participatory Community Plan (PCP) report, and NATC employees who are long-term citizens of Njawara and who have been involved with Kerr Ardo citizens through their training program. Select farmers from both Njawara and Kerr Ardo have participated in either the short-term adult or long-term youth training programs. Both communities are predominantly Wollof speaking. Njawara Village is located in the lowlands adjacent to a tributary of the River Gambia. Agricultural activities in Njawara consist of cash crop and subsistence farming, rice farming, and vegetable gardening. Kerr Ardo is located approximately two kilometers east of Njawara. Agricultural activities in Kerr Ardo consist of cash crop and subsistence farming and cattle rearing, horticulture is not possible due to limited groundwater availability.

Additionally, three adjacent villages located within the same watershed, Torro Tayam, Torro Ba, and Panneh Ba, have been sensitized about the GEAD project. These villages will have secondary involvement in the project by having village representatives involved in the discussion of regional environmental issues (such as livestock management and watershed issues) and being openly invited to the farmer-to farmer training sessions.

6.0 Workplan for Project Activities

There are five basic steps in the implementation of the Agro-Ecological Village Development Model: community identification, community organization, farming planning process, implementation of plans, and performance measurement. For illustration and greater detail of these steps, please refer to Figure 1.

Figure 1. The 5 step process of Agro-Ecological Village development implementation



6.1 Community Organizing

6.1.1 Existing Community Structures

The Participatory Rural Appraisal process revealed the internal institutions operating in both Njawara and Kerr Ardo. Knowledge of these institutions and their mandates proved necessary for effective project planning, especially since some of them are included in project management and implementation. Generally, internal institutions, locally referred to as *kafos*, are small-scale committees that depend on community resources for their activities, and tend to have poor organizational development and a lack of strong management structures. However, other internal institutions such as NATC do exist, with strong organizational development and involvement in international initiatives. NATC is completely operated and managed by community members. Of the internal institutions identified in Njawara and Kerr Ardo, the most relevant is the Village Development Committee (VDC). VDCs are newly established in the Gambia for the purpose of providing a suitable conduit for development agents to engage local communities directly. VDCs coordinate all *kafo* activities and are seen as the main decision making body in the village. Before VDCs were established, village elders (*alkalos*) were the main contact point for entry into a community, a system recognized to be somewhat unrepresentative of the community's interest. The support and involvement of the VDC is critical to any development effort undertaken in the Gambia.

6.1.2 First-Line Farmer Trainers

Twenty key farmers (or "first liner farmer trainers"), both male and female, have been identified in Lower Badibu to act as lead trainers to the other farmers. The PRAs in both villages first identified potential farmer trainers and sensitized the community about the qualifications desired in a farmer trainer candidate. VDCs were then used to officiate over selecting candidates for farmer trainers, and together with the PMC later finalized the lists for both Njawara and Kerr Ardo by April of 2004.

These farmer trainers are experienced farmers who have proved their dedication to the advancement of farming, are motivated and have a progressive and resourceful community development orientation. They are currently being trained and will be exposed to topics such as how to be a trainer of trainers, group management, participatory community planning, the Participatory Learning Action and Research (PLAR) educational approach, as well as the REFLECT method employed in VATG literacy circles and skills development. Since their selection the farmer trainers have been actively involved in project implementation, and are in constant communication with the community and VDC members, acting as the main interface between the project and the community. Potential farmer trainers (known as "second liners") have also been recruited and will build their skills so that one day they may conduct trainings themselves. Of utmost importance to the project team is to encourage both men and women to participate equally in trainings, both as trainees and trainers. Through the development of this farmer-to-farmer network, village farmers have the opportunity to gain confidence through participating in and facilitating farmer-to-farmer trainings.

6.1.3 Farmer Technical Groups

One aspect of the Agro-Ecological Village model for sustainable community development is the establishment and capacity building of farmer technical groups specialized in certain agricultural techniques or approaches over time. These groups are designed to enhance the confidence of local people in creative thinking, emphasizing traditional knowledge. Mixed groups related to gender specific activities (such as gardening, groundnut production) are encouraged. The members of these groups are local community farmers that participate of their own interest and accord. The technical groups provide an effective, participatory and consensus-based method in dealing with environmental and socio-economic issues. They select relevant topics for brainstorming, elaborate discussions, field-testing, researching new information or techniques and fostering teamwork and cooperation within and between the various farmers groups and local partners. Currently, members of the technical groups have specialized in areas such as:

- Organic manure for rice production
- Organic seed dressing for groundnut and intercropping with sorghum, Leaceana and sesame
- Intercropping improved millet with cow pea to reduce Striga weed invasion and with Acacia for nitrogen fixation
- Intercropping of improved maize with cowpea to reduce Striga weed invasion
- Production of findo, a traditionally nutritious, protein and vitamin rich grain crop that is quickly disappearing in the Gambia due to lack of seeds and over-emphasis on millet and groundnut production
- Vegetable production using agroforestry interventions including live fencing and the planting of Moringa oleifera

At this early stage, the technical groups have involved the participation of the Project Technical Team (PTT), made up of mostly of first-line farmer trainers and some other farmer representatives, along with technical persons from NARI. Capacity building of the PTT is an ongoing process through project implementation, and naturally supports the establishment of a farmer-to-farmer training network, managed principally by farmer trainers. The PTT is helping to create the social infrastructure that will ensure project sustainability. Its development will link farmers in surrounding communities by providing information on ecological farming methods and important new agricultural trends.

6.1.4 Capacity Building of Project Team Members

Capacity building will occur throughout the lifespan of the GEAD project, and began with building staff capability at NATC to handle GEAD implementation. This included the recruitment of a Project Manager (Mr. Sutay Njie), Monitoring and Evaluation Officer (Mrs. Kelly Taboureh), Project Accountant (Marley Jallow), and Community Organizers for Njawara and Kerr Ardo (Mr. Adama Sallah and Mrs. Mariama Ceesay). Staff trainings followed the appointment of new staff members. Staff trainings were not exclusive however to PMC and PIT members, but included NATC staff that will support project activities. Members of the Multi-disciplinary Facilitating Team, made up of extensionists from different government departments were also invited to join, promoting project linkage with government activities. The local agricultural extensionist was able to attend both sessions. The table below outlines staff trainings delivered and participation rates.

Table 3. Overview of staff trainings

No.	Subject	Date	Training Topics	Participants			
				From	Female	Male	Total
1	Farm data collection and M&E	May 1-2, 2004	Problem identification Practice of structural survey in rural areas Agricultural Policy matrix Principles of using a log frame Questionnaire development for baseline study Review of questionnaire	GEAD NATC MDFT	2 1 1	3	7
2	Introduction of ecology and ecological agriculture	May 5-6, 2004	Ecological Agriculture Define: environment, ecology, ecosystem, biosphere and biodiversity Water and energy cycle Relationships in the eco-system Agriculture in the Gambia Factors affecting the environment Ecological farm practices Principles of eco-farming Sustainable agriculture	GEAD staff NATC staff MDFT	1	2 3 1	7
TOTAL					**5** (36%)	**9** (64%)	**14**

Two two-day sessions were conducted for project staff. The first session was on farm data collection and Participatory Monitoring and Evaluation (PM&E). The training was intended to build staff capacity in conducting base line studies, data analysis and PM&E. The second training was an introduction on ecology and ecological agriculture and was meant to expose the staff to ecological principles and different ecological farming practices and techniques. It was also intended to equip them with the technical background to be able to grasp project objectives and facilitate project implementation in their respective roles. Project staff also attended a session on Group Management, which included topics such as the development of Community Based Organizations (CBOs) and the establishment, facilitation, and operation of farmer associations and training networks.

6.1.5 Participatory Rural Appraisal

The Participatory Rural Appraisal (PRA) took place from March 26 to April 2, 2004. It was successful in revealing the communities agricultural concerns and identifying potential members for community level committees. The PRA was contracted to Mr. Musa Suso of the Socio-Economic Unit of NARI, who recruited a team of PRA practitioners and organized and oversaw the planning and implementation of the PRA. The PRA Team consisted of:

1. Musa Suso, PRA team leader, National Agricultural Research Institute (NARI)
2. Labib El Ali, REAP, Gambia Programme (team member)
3. Claudia Ho Lem, REAP, Canada (team member)
4. Abdoulie Jallow, Village Aid, Kaur (team member)
5. Abdoulie Jallow, Extension, Basse (team member)

6. Sutay Njie, REAP Project Coordinator (observer)
7. Adama Sallah, REAP field worker, Kerr Ardo (team member)
8. Pa Panneh, Extension, Njawara (team member)

The PRA team took one day for PRA planning, followed by four days of activities in Njawara and three days of activities in Kerr Ardo. In each village, field investigations and preliminary data analysis took up the first day, followed by three days of plenary exercises in Njawara and two days in Kerr Ardo. The objectives of the PRA were as follows:

- To analyze the agro-ecological systems of the two villages
- Identify problems, causes and solution
- Identify key areas where improvements could be made
- Develop an action plan for implementation

The field investigations consisted of:

- Transect walk across a cross-section of the village and its surroundings in order to develop an understanding of village space eco-systems
- Seasonal calendars (crops and vegetables) with two different families to assess the seasonality of different activities
- Resource mapping to look at different resources available to the community and their current use to the community
- Gender analysis on roles, activities, and resources to find out who has ownership, access and control of the community's resources

The plenary discussions that followed field investigations involved a large group of participants, which were at least 40 in number and included adults and youth of both genders in nearly equal numbers. The large groups was often broken up into smaller focus groups that were responsible for a specific topic identified by the larger group to be of main concern to the community. The small groups then assembled to present their findings and engage in a group categorization exercise. The plenary discussions generally followed the following sequence:

Identification of general community concerns and specific agricultural development constraints
Revealing the causes to the identified problems
Brainstorming on possible solutions for the causes of the agricultural problems
Participator Action Planning (PAP)

The sessions also presented an opportunity for REAP to sensitize the community about the project's mandate and the issues that it can address. In this way the community was free to openly discuss all their pressing issues, while maintaining a level of realism about what can be accomplished through an ecological agriculture development project. This was found to be an effective way to familiarize the community with the project structure and its purpose. The PRA report includes detailed tables and diagrams, and documents progress through PRA implementation. In summary, the most pressing issues raised by the community included the following:

Poor soil fertility Degrading environment Soil erosion Stray animals Low crop yields Lack of improved crop varieties Lack of trees Striga infestation	Crop pest and disease infestation Termite attack in the vegetable gardens Lack of adequate farm implements and inputs Lack of skills for the maintenance/repairs of farm implements

6.2 Farmer to Farmer Training and Farm Planning

6.2.1 Farmer-to-Farmer Training

The farmer-to-farmer training process allows local farmers to take the lead in community capacity building. The investment in empowering and training farmers generates a high capacity to continue the development process. Additionally, the investment in strengthening the farmers' institutions, and developing bottom-up training programs to complement the traditional top-down infrastructure are key features that will help continue the development process in communities beyond the project's lifespan.

Farmer-to-farmer training was initiated by investing in beneficiaries directly through structured trainings and on-the-job coaching. Farmer trainers are currently benefiting from being the first to work with improved plant materials and ecological methods on their learning farms, and are taking the lead in adopting activities that work towards AEV development and training other farmers through a farmer-to-farmer training network on ecological methods and principals.

6.2.2 Training Module Development

The capacity of farmer trainers is being developed through a ladderized training program, where technical sessions are presented in an order of increasing difficulty. Sessions are structured around ecological farming training modules, which are adapted to the Gambian agricultural situation, climate and environment. As well, the language is being modified to fit local education models and levels of literacy. The PRA and PAP sessions were useful in identifying key areas of interest for module development that would be of benefit to the local faming communities, with trainings customized to each community's training needs. The Monitoring and Evaluations Officer is active in assessing the appropriateness of the trainings to the communities. Her feedback will be useful in modifying lesson plans to suit the community's needs in the future. Please refer to Table 4 for a complete listing of current and potential training modules and their sources.

Table 4. GEAD Training Modules	
Training Module	**Existing Module**
Introduction- Principles of ecology and sustainable agriculture Ecological Principals Agriculture in the Gambia Ecological Farming	REAP
Soil Fertility and Organic Components of Soils - Introduction to Soil Fertility and tropical soils - Soil Properties Physical Chemical Biological - Organic components of soils Organic Matter Composting Manure management	REAP NATC
Cropping Systems - Basic Principles - Benefits of cropping systems - Examples of Crop Rotations - DIFS (Diversified Integrated Farming Systems)	REAP
Green manures and cover crops	REAP
Weed management control	REAP
Disease and Pest Control / Integrated Pest Management (IPM)	REAP/NATC
Soil and Water Conservation	REAP
Livestock Management	REAP/NATC
Holistic Farm Planning and Design (food footprint)	REAP
Agroforestry	NATC
Horticulture and Dry Season Vegetable production	NATC
Nursery Management	NATC
Gender	NATC
Food processing, preservation, storage and marketing	NATC
CBO Seminar	NATC
Training Of Trainers (TOT)	VATG
OJC (On the job coaching/mentoring)	-
Hungry season food security	-
Plant improvement (adaptability, farmer-led breeding)	-
Seed conservation, plant material propagation and multiplication	-
Group management	VATG
Participatory Community Planning	VATG
Participatory Learning And Research (PLAR)	VATG
REFLECT Method	VATG

REAP-Canada is taking the lead in training module development, with the support of all project proponents. In order to deliver the introductory trainings before the planting season, NATC modified several training modules to be more applicable to the Gambian context. The following three have been modified by NATC and are currently being used for farmer training:

- Introduction to ecological farming
- Soil fertility
- Cropping systems

Also currently under development are the Soil Fertility and Organic Components of Soils module and the Livestock Management module.

6.2.3 Trainings and Training Schedules

Training of community farmers on ecological methods was initiated before the structured module trainings began. Agro-ecological Village orientations were the first exposure farmers had to the ecological farm principles from REAP-Canada. The PRA also offered many opportunities for clarifying basic ecosystem principles and ecological agriculture approaches. However, systematic training of the farmer trainers with training modules using the ladderized training method only began in May of 2004. Farmer trainers have since received trainings on three modules. To date a total of 141 individual training sessions have been held with community members. Of these sessions, 49% of the participants (69 people) have been female. Please refer to Table 5 for a complete list of the GEAD farmer trainings conducted to date.

Table 5. Overview of GEAD farmer trainings delivered

Subject	Training Topics Covered	Dates	Participants		
			Total	Male	Female
Agro-ecological Village Project Orientation	Njawara and Kerr Ardo	Nov 22, 29, 2003	80	40	40
Participatory Rural Appraisal (PRA)		Mar 26 to Apr 2, 2004	80	40	40
Introduction to Ecological Agriculture	What is Ecological Agriculture, its principles and advantages Agro forestry Adult learning Water and nutrient cycle Relationship between human and environment Moving towards ecological farming Tree seed treatment and sowing	May 12 to 13, 2004	21	11	10
Group Management	Group management Characteristics of an effective CBO Constitutional development Leadership skills Role of CBO in GEAD project Record keeping Communication skills Resource mobilization & utilization PM&E	May 18 to 19, 2004	21	11	10

Soil Fertility and Cropping Systems	Introduction to the Soil Soil fertility Biological properties of the soil Soil Organic matter Organic Fertilizers Importance of compost What materials can be used to make compost Practical: Making a compost pile and manure tea Introduction to cropping systems Making session plans in order to prepare your training Crop rotation Agro forestry Strip planting and intercropping	June 3 to 5, 2004	19	10	9
TOTAL			**141**	**72**	**69**

Training of farmer trainers has been carried out by NATC and NARI staff, as well as agricultural specialists from other agencies. Other than the meals farmer trainers are receiving during trainings, no reimbursement is being issued to ensure that the interest of participants is in the education provided, not in immediate monetary compensation. Aside from the official trainings, farmer trainers are also supported by On-the-Job Coaching during site visits and individual visits to NATC. They are in frequent contact with the Project Coordinator, Project Manager, and Community Organizers, and as such are getting continual feedback and providing updates on farming situation.

Schedules have been developed by the PMT for the training of farmer trainers and the subsequent training of community farmers by farmer trainers. Tables 6 details the scheduled training of farmer trainers and the training of community farmers by farmer trainers in 2004.

Table 6. Schedule for GEAD Trainings for farmer trainers

Training	Month to be held (2004)
Resources Management	May to Dec
Training-of-Trainers	May
CBO Management	May to September
Introduction to Ecological and Sustainable Agriculture	May
Soil Fertility and Organic Components of Soils	May and September
Cropping Systems, Green Manures & Cover Crops	June
Livestock Management	August
Holistic Farm Planning and Design	August
Disease & Pest Control/Integrated Pest Management	July and September
Weed Management and Control	July and August
Agro-forestry and Nursery Management	June and December
Soil and Water Conservation	July and October
Dry Season Vegetable Production	November
Hungry season food security	August
Food Processing, preservation, storage & Marketing.	November
Gender for CBO leaders	November
Plant material propagation & seed conservation	September
Plant Material Improvement	August
CBO seminar	December

On-the-job coaching	January to December
Training Materials	July
Participatory Community Planning	September
Participatory Learning & Action Research (PLAR)	October
REFLECT Methodology	August & Sept

6.2.4 Farm Planning and Diversification

Initial farm plan development is underway but is limited as the farm planning module is delivered at the end of the ecological farming training course, which farmer trainers are currently only at the beginning of. This is because the timing of the project has affected the schedule for farm plan implementation. May and June, the months immediately preceding the rainy season in the Gambia, are a busy time for all farmers as they weed and plow their fields, and plant early varieties of field crops. The time farmers have to designate to farm planning is therefore limited. High illiteracy rates among the rural population is also proving a challenge for the PMT and PIT in assisting farmer trainers in preparing detailed farm plans. However, basic farm plans have been developed by each of the 20 first liners. They include details on the following:

- Crops planned to be grown
- Area (Ha.) covering each crop
- Seed requirements (internal or external)
- Implement requirements (internal or external)

These plans will at least give the PMC and PIT an idea of how the first liners will develop their farms during the rainy season and how best to introduce agricultural methods and improved plant materials into learning farms. The farm planning module is currently under development. Planning tools such as seasonal calendars, the food footprint, transect maps, workplans, cropping systems and rotation information, 5 and 10 year land use goals, predicted expenditures are currently being developed will be incorporated into the module.

6.2.5 Women and Trainings

It is essential that women are enlisted as trainers in the farmer-to-farmer training program. The purpose of this is threefold. First, it is to build the capacity of these individual women as trainers. Second, it is to have women engaged as active participants in the project and ultimate in the community. Third, it is because it is from women that other women will learn best. This is one of the most challenging aspects of the programming as the women in these communities may be poorly educated and painfully shy. However, we must recognize that the involvement of women in every aspect of the project is fundamental to the improvement of the quality of life for the farmers, for the cohesion of the communities, and for overall success.

Participation of women in farmer trainings is almost equal to that of men, with an average participation rate of 49%. This is an extremely encouraging turnout in light of the heavy workload that women are under all day long and is an indicator of their commitment to the project and the improvement of their community, and also of the effectiveness of the trainers and facilitators in involving them in the training sessions and making them of benefit to both genders.

The project will continue to pay more attention to the sustained involvement and empowerment of women in Njawara and Kerr Ardo. By specializing farmer trainers in topics of their interest, GEAD is shifting traditional roles by putting valuable knowledge in the hands of women. Through farmer training women are also gaining the confidence to voice their concerns and opinions on topics on which traditionally men have the final say. They are developing their potential to secure their own livelihood through increased and sustained agricultural production, thereby gaining some measure of economic independence.

6.3 Learning Farm Development and Plant Material Improvement

Rains customarily begin in the Gambia in mid June. The first rains this year however, came during the first week of June, and have since stopped. This is proving precarious for Gambian farmers in their decision over when to begin planting their field crops, especially the early varieties of millet and maize.

6.3.1 Collection and Distribution of Improved Plant Materials

A variety of improved plant materials and crop varieties are being collected for the development and establishment of learning farms. The following seeds for field crops have been distributed:

- Improved maize variety (Jeka): short duration variety
- Groundnut (7333)
- Rice (Nerica)
- Findo

Improved cassava cuttings and sweet potatoes, cowpea, and sesame seeds have been prepared for provision during the rainy season. Various other packaged seeds include Jordan black bean, Kang Kong TSI NALP, Norman Pole snap beans and others. They are being tested for viability and will be eventually multiplied should they prove adaptable to the Gambian environment. Vegetable seeds have also been supplied for wet season vegetable production, please refer to Table 7 for a complete listing:

Table 7: Vegetables procured for rainy season production

Vegetable	Amount	Variety
Tomato	5 g	Mongal F1
Cabbage	25 g	KK Cross F1
Hot Pepper	5 g	Safi
Sweet Pepper	15 g	Stella

Arrangements have also been made for the multiplication of the rice seed varieties brought into the Gambia by REAP agronomists familiar with ecological and dryland rice production. These include:

- Lestari Classa
- CL 3C-7-2
- Red HVBP

- 6L 4-7-1

Tree nurseries for Multi Purpose Tree (MPTs) for fodder, life fencing, windbreaks, and parkland systems are being raised at NATC and Kerr Ardo for agro forestry activities. Shortly after selection, farmer trainers were supported in establishing their own tree nurseries, which helped to promote a sense of initiative among farmer trainers long before they took to establishing their own learning farms. Timing was also critical as trees require more time before they can be transplanted. Establishing tree nurseries in the Gambia the best begun in January in order to plant seedlings at the ideal time during rainy season. As the project tree nurseries were mostly begun in April some of the seedlings were not fully matured for transplanting during rainy season 2004. These immature seedlings will be used on the learning farms during the next planting season. Seeds for Multi Purpose Tree Species (MPTs) were provided by NARI and others were collected at the NATC and in the villages, and included the following:

- Cassia siamea
- Acacia holicera, nilotica laeta, and albida
- Ziziphus mauritiana
- Moringa oleifera
- Leaceana leucocephala
- Adansonia digitata
- Parkensonia aculeate.

6.3.2 Learning Farm Establishment

Learning farms are coordinated by farmer trainers or other interested farmers that are willing to share their experiences and ideas. In this way, the farmer trainers can spend time working on maintaining and improving their own individual farms while strongly supporting community initiatives and the sharing of information and plant materials in the community. This also establishes a stronger connection between the test trials and the ecological trainings, and is ideal for farm visits and "out of class" field trips. Learning farms can broaden development efforts by integrating several key ideas as techniques on one "regular" farm. They also avoid the concept of a terminal "Model Farm" with one model farmer, by placing the farmer and the farm at the center of learning in the community. Farmers feel the terminology "Learning Farm" is progressive as it does not create an image that a farm is "fully developed or perfect" or encourage arrogance in farmers. Farmers want to put the emphasis on farmer trainers creating a small commercial farm that is sustainable without outside support so that the development process can be feasibly replicated by other farmers.

Each first liner is in the process of establishing a learning farm on a part of their farmland. Initially an area of 0.5 ha was to be reserved for learning farm activities. However during site demarcation (which is still in progress), some farmers found it to be too large an area to take away from conventional crop production, since there is always a risk associated with introducing and testing new varieties. Furthermore, the AEV model does not encourage farmers to take risks with their food security while testing out new cultivars. As such learning farms for some farmer trainers are smaller than 0.5ha, their exact size will be determined before the end of the planting season.

To date in field crop farms, only two farmers have begun cereal planting (early millet and findo). Closer to the river in the vegetable gardens, two female farmers began with the planting of baobab seedlings which are intended for fodder and food banking. Six beds of 6m² have been planted and show a 100% survival rate. Depending on the crop(s) selected for their learning farm, appropriate ecological farm practices have and will be applied. Table 8 details the crops and practices that will implemented on the learning farms during the current year.

Table 8. Crops and ecological farm practices to be implemented on learning farms

Type of Crop	Females		Males		Ecological farm practices
	Kerr Ardo	Njawara	Kerr Ardo	Njawara	
Rice		4			Application of organic manure
Groundnut	4			4	Organic seed dressing with neem powder Intercropping with sorghum Interplanting with Leaceana Intercropping with sesame
Early millet			3	1	Intercropping with cowpea to reduce Striga Planting of Acacia for Nitrogen fixation
Maize	1		2		Intercropping with cow pea to reduce striga
Findo		3		1	--
Cowpea			1		Intercropping with cereal
Vegetables		1			Agro forestry practices including live fencing and planting of Moringa oleifera
TOTAL	**5**	**8**	**6**	**6**	

Additionally, the following agroforestry practices are effective in learning farm development, and are awaiting assignment so specific farmer trainer. The following practices

- Acacia albida for alley cropping in groundnut
- Zuzuphus mauritiana for life fencing
- Cordila pinata (bush mango) for farm boundaries and parkland
- Acacia nilotica for windbreak
- Acacia laeta for life fence

Activities at the learning farms during the planting and growing season will involve farmers developing tests and recording new techniques and materials. Plant materials will be assessed by the farmers for various agronomic traits, performance and yield. Promising varieties will then be increased into larger field strips through the crop verification process. Trials testing new varieties of interest and confirming characteristics of varieties that demonstrated high adaptability to local conditions will also be undertaken. Other on farm testing of plants and livestock systems will also be developed based on priorities identified by the community through the PRA process. The overall goal is to encourage farmers to take a more active role in developing participatory on-farm research as a tool for accelerating their plant and farming systems improvement. Efforts will be

made to further the local understanding of the links between the farmers and the environmental conditions through the farmer training program and field trials.

6.3.3 Farm Inputs and Implements

Farm inputs and implements are major concern to farmers in Njawara and Kerr Ardo, as revealed through the PRA process. An ecological orientation favors the introduction of sustainable, environmental friendly inputs and implements. This is a foreign concept to many farmers in the Gambia as they have been traditionally exposed to only heavy chemical fertilization for increased production, and associate progressive implements with mechanized equipment. The PRA process identified other locally available alternatives which will be investigated in the upcoming months. In line with AEV principles to ecologically improve the production capacity of the farmers and farmer trainers, the following farm inputs and implements have been provided by the project:

Table 9. Overview of farm inputs and implements provided to farmer trainers

Item	Quantity	Beneficiaries	
		Male	Female
Donkeys	6	3	3
Donkey cart	6	*Not yet allocated*	
Groundnut seeds	566 kg	10	10
Rice seeds (Nerica)	150 kg	-	5
Findo seeds	15 kg	1	3
Maize seeds (Jeka)	25 kg	2	1
Vegetable seeds	50 gr.	-	1

Additional support for acquiring farm inputs and implements may be facilitated through micro-financing. Though the project has not developed a micro-financing strategy, options for micro-finance are being investigated in accordance with the farmers' needs as they progress through the training process.

6.3.4 Research and promotion of energy saving cooking devices

Attempts are being made by the engineering unit of NARI to improve on the suitability and efficiency of the Mayon Turbo Stove (MTS) and other similar stoves. A trial test has been carried out at Njawara Agricultural Training Centre (NATC) with the first liners from Njawara and Kerr Ardo. The sample stove (the prototype) proved more efficient than the other one but smaller in size. It could comfortably boil water and prepare light foods (frying eggs) using aluminum or light plate cooking utensils. The participants observed that the other stove would need further improvements such as uplifting the stand elevation and providing adequate air passages underneath. Modification and improvement is in progress.

7.0 Project Management

7.1 Project Management and Implementation Structure

The partner organizations, REAP-Canada, NATC, NARI, together with farmer trainers and representatives from the local VDC's have formed the Project Steering Committee (PSC), Project Management Committee (PMC), the Project Implementation Team (PIT) and the Project Technical Team (PTT) responsible for the overall direction and management of project responsibilities, implementation, research and field activities. Also Farmers Associations (FA) have been formed in each of the beneficiary villages and are currently being trained to increase their capacity in the management of a Community Based Organization (CBO) and in the organization of training programs and learning farms.

Project Steering Committee (PSC)
The PSC includes the Canadian partners, NARI, VATG and NATC. The committee is responsible for the overall supervision and coordination of the project implementation, field operations, and finances. They are also responsible for the joint project review, assessment and planning, and direction setting and policymaking.

Project Management Committee (PMC)
The PMC is responsible for local implementation of the project at the county/township level. The PMC is headed by the local project implementing partners from NATC, NARI, REAP (including interns) and the local VDC's. The PMC also includes a local finance officer, community organizers and farmer trainers. The Project Management Committee (PMC) links project proponents with community representatives from the Village Development Committee (VDC) and the first-line farmer trainers at the management level. The PMC is directly leading project implementation and facilitating farm management decisions. It has overseen the development of the current management structures, including the two groups of farmer trainers. The PMC is overseeing the development of the farmer networks in both villages, as well as the development of learning farms and other project activities.

Project Implementing Team (PIT)
The Project Implementing Team (PIT) is composed primarily of local community organizers, village group leaders, farmer trainers and farmers, local government extension personnel, and other technical persons from NARI and elsewhere. The PIT facilitates project organizing and implementation, coordination and technical trainings and on-the-job training/coaching. They are involved in field implementation and on farm research and provide a link between the community and the PMC. They are also involved in recording the technical trainings (topics, locations, participation, women) and other community activities such as the development of field-level implementation. They also provide feedback and reports during the project assessment and planning sessions on the status of their work to the local project coordinator and PMC.

Project Technical Team (PTT)
The Project Technical Team (PTT) is composed of local farmer leaders, farmer trainers, local government extension personnel, other technical persons and farmers from the farmer technical groups. The PTT shall be responsible for assisting and conducting technical trainings and on-the-job training/coaching, and be involved in the field implementation and technical aspects of on

farm research. They will also provide feedback and reports during the project assessment and planning sessions on the status of their work to the PMT.

Farmers Associations (FA)

Two Local Community Based Organizations (CBO's) known as Farmers Associations (FA's) have been established, one in each community. They are responsible for community resource mobilization and managing the distribution of inputs/implements from the project to Farmer Trainers and other local farmers.

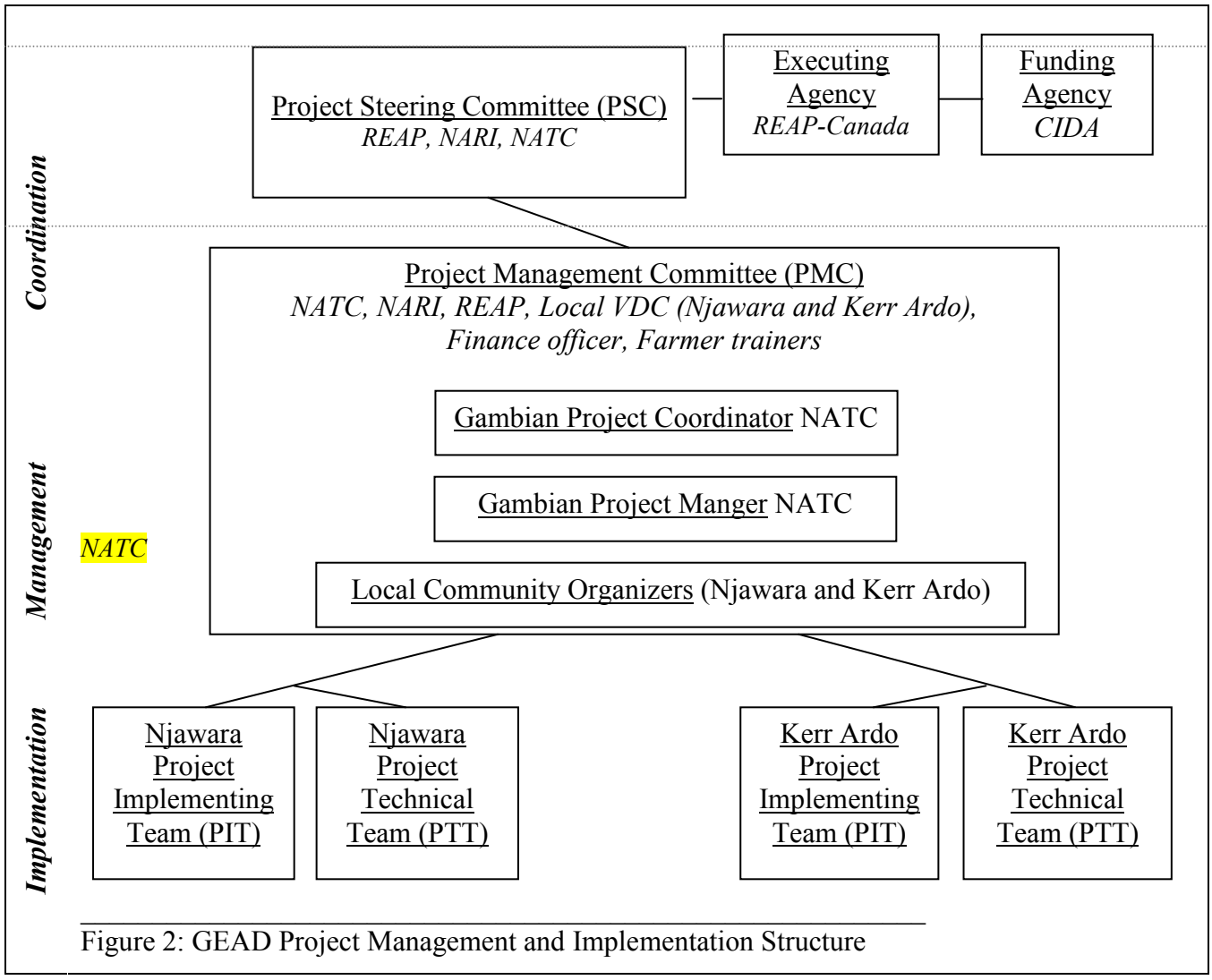


Figure 2: GEAD Project Management and Implementation Structure

Table 10: Official GAEV Project Management and Implementation Team Members		
Team or Committee	**GEAD Project Official Team Members**	
Project Steering Committee	Mr. Roger Samson Miss. Claudia Ho Lem Mr. Badarra Jobe Mr Sutay Njie Mr. Ansumana Jarju Mr. Dawda Kebbeh	
Project Management Team	Mr. Roger Samson Miss. Claudia Ho Lem Mr. Labib El-Ali Njawara VDC Kerr Ardo VDC Farmer Trainers	Mr. Badarra Jobe Mr Sutay Njie Mr. Ansumana Jarju Mrs. Kelly Tabureh Mr. Adama Sala Mrs. Mariama Ceesay Marley Jallow
Team or Committee	**Njawara Official Team Members**	**Kerr Ardo Official Team Members**
Community Organizers	Mrs. Mariama Sise Kebbeh	Mr. Adama Sala
Project Implementing Team (PIT)	Mrs Mariama Sise Kebbeh Njawara Village Group Leader Government Personnel NARI Technical Staff Farmer Trainers	Mr. Adama Sallah Kerr Ardo Village Group Leader Government Personnel NARI Technical Staff Farmer Trainers
PTT and Farmer Trainers	Ami Panney Rahey Dem Mary Jobe Ami Sanney Mam Tuti Sar Samba Jallow Jim Tourey Yero Jallow Mbye Dranneh Yahya Sowe	Pa Touray Yusufa Touray Ali Faye Saderr Jallow Bekai Keita Gabudeh Sowe Jai Sise Kala Drammeh Isatou Touray Sohna Sise

7.2 Resource Requirements

7.2.1 Project Staff

During the initial stages of implementation, local staff were hired or dedicated to the project for the upcoming year. At NATC, one staff was dedicated and five personnel were recruited to fill the key positions for the project, while at REAP-Canada three project team members were selected and at NARI there is one person dedicated to the project. The details for project staff are as follows:

Gambian Project Coordinator - Mr. Badarra Jobe, Director, NATC.
Shall be responsible of coordinating staff to implement field level activities, conducting field monitoring and evaluation, act as the link between project field officers, relevant NATC staff who may have a role in the project activities and REAP staff, and will network with other like-minded groups who can further the projects goals and objectives.

Gambian Project Manager - Mr. Sutay KL Njie, NATC
Shall be responsible of the overall management of the project, resource mobilisation, coordination of field level activities and facilitate the process of progress reporting. He will work with the Gambian project coordinator in the data consolidation in the Gambia for submission to REAP-Canada. He will be responsible to ensuring the smooth implementation of programs/ activities in line with the plans and budget allocations as per budget line. As the manager of the project, he will be responsible for the on the job coaching of staff with a view to maintaining efficiency in their performance. The manager will maintain a close link with NARI for the timely implementation of planned activities.

Project Monitoring & Evaluation Officer –PM&E (Mariama / Kelly Tabureh)
Shall be responsible for the development of the PM&E framework and all monitoring and evaluation activities of the project. Responsible for the compilation of field workers monthly reports. The PM&E Officer will work with the project manager and the project coordinator in developing reports for submission the REAP Canada.

Project Accountant – Marley Jallow
Shall be responsible for the monitoring and consolidation of Southern Partners expenses, and the development of a financial plan for the anticipated flow of expenses during the year.

Gambian Community Organizers (2) – Mr. Adama Sallah & Mrs. Mariama Ceesay
Based in their respective local community, will be responsible for facilitating organizational strengthening activities, project analysis, the necessary social activities to prepare for technical training and the training activities. Also responsible for coordinating activities with local project officer, including monitoring field implementation activities and trainings.

NARI Agroforestry Program Leader/Focal Point (coordinator)– Ansumana O. Jarju
Shall be the focal point representing the Director of NARI. He will be responsible for the coordination of all NARI activities and or responsibilities as contained in both the partnership agreement and the activity schedule. He will consult with all the relevant Program leaders at NARI and coordinate the implementation of all the required research activities at the project site. He will maintain a close link with the project management at NATC to keep tract of progress.

VATG Project leader/ Focal Point – Mr Dawda Kebbeh
Mr Kebbeh is the country Programme Manager for VATG and shall be the focal point for the present and future partnership with VATG. He will be responsible for the coordination of VATG's activities in the collaborative training and plant material improvement programs.

Canadian Project Manager – Claudia Ho Lem, REAP Canada

Responsible for overall written and financial reporting of the project to CIDA. Will oversee project management and implementation. Also responsible for facilitating the appropriate arrangements for the roles and responsibilities of the Canadian partner as described in this project.

Canadian Agronomist – Roger Samson, Executiive Director, REAP Canada
Responsible for technical agronomical guidance and for co-facilitating the appropriate arrangements for the roles and responsibilities of the Canadian partner as described in this project.

Canadian Project Officer Labib El-Ali, REAP Canada
Provide support role to PMC in administering REAP's roles and responsibilities to the project. Shall be directly involved in coordinating with project partners, in regards to meeting financial guidelines, trainings, narrative reporting requirements and project monitoring and evaluation.

External Farmer trainers / advisors
Expert team from NARI enlisted to train the first and second liners in the farmer-to-farmer training program. In the event that there are no experts available on certain training topics within NATC / GEAD outside consultants will be hired to fill that gap.

Farmer trainers
Local farmers selected and trained to deliver project trainings to community on sustainable agricultural techniques including soil and water conservation, re-vegetation, and diversified farming. Farmer trainers will include both experienced farmer trainers (first liners) and farmer trainers in training (second liners). The farmer trainers are the project's main link with the community, and are continually supported by the Project Manager and Community Organizers.

Canadian Staff Field Missions to the Gambia
The REAP-Canada GEAD Project Manager and Project Officer conducted a project field mission in March-April of 2004 to participate in the PRA and develop the project workplan for the first year of the project. An upcoming trip is scheduled in August of 2004 for the Project Agronomist to assist in the development and assessment of the learning farms and plant materials accessed. In addition to a project manager, the NATC project team will have two staff working at the field-level with farmer beneficiaries and one responsible for organizing farmer trainings. It is expected that the NATC team will have a strong (50%) representation of women.

Additionally, two CIDA-funded Canadian interns will be arriving in Gambia on August 3, 2004 and will provide project support and monitoring for the next 6 months. There will be two additional interns arriving in August the following year for another 6 month stay.

7.2.2 Office Equipment

The project office in the Gambia is located with in the NATC campus. Part of the library of the centre has been renovated and is now being used as the project office. A telephone has been installed and electricity is supplied from both NATC's solar system and their generator. New office supplies and equipment were also purchased during the first half of the project including a new project laptop and 3in1 multi-function copier, printer and fax.

7.3 Project Workplan

At the outset of the project, a Participatory Action Planning (PAP) session was held on April 4-5, 2004, involving the PSC and the PMT to develop a detailed workplan based on the information collected in the PRA for the activities/outputs for which they, along with the PIT and Farmer Trainers are responsible. PAP sessions also addressed necessary community organization structures and project sustainability with respect to the establishment of farmer-to-farmer training networks that are anticipated to outlive the GEAD project. The result of these PAP sessions was the GEAD workplan, finalized in May/June of 2004. It identifies milestones and expenditures associated with the completion of each activity, organized under project objectives, and is reviewed on a monthly basis to monitor the project's overall progress and conduct strategic planning. Schedules have also been developed for farmer training sessions and the development of training modules.

7.4 Monitoring and Evaluation

Following the completion of the PRA and the establishment of a community monitoring structure, program officers and support workers are responsible for reporting issues encountered at community level to their respective organizations and the PMT and PIT on a monthly basis. This feeds into the monthly updates that take place between the southern partners and REAP-Canada, which are used to track immediate progress and any issues that may arise, ensuring effective and timely management. Southern partners also report quarterly to REAP-Canada, indicating an analysis of the quarterly activities and outcomes, including individual financial reports. REAP-Canada is responsible for the annual reporting to CIDA, based on the field visits, monthly updates, quarterly reports, and frequent communication that will take place between project partners.

Careful monitoring of performance indicators is essential to the success of the Agro-Ecological Village development programming. For this portion of the project, performance is being measured through data collection from 80 families in the Lower Badibu communities for the establishment of baseline conditions at the onset of the project. In addition to the 20 randomly selected farmers in each village, the 10 first liners and 10 second liners in each village have also been solicited as respondents, giving a total of 80 respondents. Currently, preliminary data has already been collected and is undergoing analysis, with report writing in progress. The results will be incorporated into the long-term development of the project.

These families were recruited during the community-organizing phase of the project, and will be relied upon throughout the course of farm development to provide baseline measures and indicate project performance through a PM&E process. Efforts will be made to ensure that these families are representative of the larger group of beneficiaries in terms of socio-economic status, household size, education level, farming experience and land ownership. Information contributed from these families will indicate the degree of project success while providing feedback through which programming can be improved.

The socio-economic and agricultural indicators in the survey were finalized by the community and the PMC. The baseline information collected has been focused on the beneficiaries' present farming systems. The following topics were investigated:

- Personal profile (including demographic characteristics, education, etc.)

- Income and expenditure
- Cost of production (farm operations, fertilizers, seeds)
- Agricultural production, productivity and yield per hectare
- Animal rearing
- Ownership, control and access to farm implements and land
- Awareness of ecological farming; i.e. what kind of farming systems are known, practiced and what are their advantages and disadvantages
- Constraints faced by the farmers.

Participatory Monitoring and Evaluation (PM&E) maintained by the community members, farmer trainers and Project Monitoring and Evaluation (M&E) Officer is also an integral part of Agro-Ecological Village development. A PM&E program is being continuously used to monitor important indicators, validate the action plan, assess the direction of the project, make management adjustments, elucidate procedures and ensure the ongoing capacity building of the community. It may qualitatively measure environmental changes and perceptions that scientific data or government surveys may overlook. A PM&E framework is being developed by the farmers and the M&E Officer to assess the development of the learning farms by having the farmers develop their own criteria for plant material adaptability and appropriateness to the local region. Two training sessions on PM&E have also been held for project staff, consisting of a two-day training on farm data collection and PM&E methods. The training was meant to build staff capacity in conducting base line surveys, data analysis and long-term participatory monitoring and evaluation. Please refer to Table 5.

8.0 Gender Equality and Gender Analysis

The findings of the PRA support observations made during exploratory field mission. It is evident that women in the Gambia in particular have very difficult lives and are in tremendous need of support programs. Women are in charge of all household duties as well as the labour intensive task of growing supplementary food, which includes the cultivation of most of the fruits and vegetables consumed by the family over the entire year. Women have little access to cash as it is traditionally men's responsibility to grow family cash crops and manage revenues. Women often have to get loans from their husbands to purchase seeds and fertilizer for the food crops they grow or ordinary household goods. During the dry/fallow season, men's work does not require them to spend nearly as much of the energy that women do during their day and are often found lounging beneath baobab trees. Additionally, women are also often forced into socially difficult arrangements through the historical custom of polygamy, young marriage, and traditional values that favor men. This puts a strain on family relations and often increases household size dramatically. As a result of these limitations, women in the Gambia have very little decision making power and are often marginalized in their own homes and communities.

The transition of the targeted communities to Agro-Ecological Villages is showing great potential to improve the quality of life of women, men and their families. The target of 25% female participation is being exceeded with female participation in trainings at 46%. Thus far, efforts have been made to facilitate both male and female participation in all decisions regarding farm development and project management. Both men and women were equally represented in the Participatory Rural Appraisal process, and baseline data collection, contributing valuable information through which the project has been evaluated and strengthened. Baseline information

was collected in a gender-segregated manner to better understand any potential impacts of the project on both sexes, ages and socio-economic bracket. The Project Management team is striving for gender balance and was successful in recruiting a female Monitoring and Evaluation officer and one female Community Organizer. The Canadian Project Manager is also female. Additionally, 50% of the farmer trainers (5 in each village) are women and 49% of participants at the trainings conducted so far have been women. The project will continue to encourage the active participation of both men and women to ensure they gain balanced control over their family and individual well-being.

9.0 Problems encountered and Recommendations

One problem encountered in the implementation of the project was the limited amount of time available after project start up to adequately prepare farmers for the planting season and to establish the learning farms. The GEAD team was solidified in May-April and as the rainy season normally is due in mid June, the initial training of first liners, development of learning farms and purchase of farm inputs/ implements all had to be done in these two months. Although this was difficult, the committed project staff and farmer trainers coupled with the organized efficiency of the Project Management Team (PMT) allowed for the bulk of the work to be completed before the planting season. The remainder of activities and trainings will be developed to ensure that farmers, project staff and the local communities are prepared for the next planting season.

Also, establishing tree nurseries in the Gambia usually begins in January in order for seedlings to mature in time for the rainy season. As the project tree nurseries were mostly begun in April some of the seedlings were not fully matured for transplanting during rainy season 2004. Again, these immature seedlings will be used on the learning farms during the next planting season.

One major obstacle in project implementation is the current delay on the second transfer of funds, a result of the hold the Gambia Trust Bank placed on the funds when they arrived in the project account. As the first transfer of funds cannot meet the current needs of the project in terms of farm inputs/implements and draft animals and carts to support the first liners, purchase of these items is being put off until second installment is secured. To overcome the above mentioned money transfer constraint, REAP-Canada will begin processing overseas transfers 2-3 weeks early to ensure project funds are available to partners in the south. Project partners will also look at other alternatives for the money transfer to avoid the delay, one being the Swift process of money transfer which has a code number of TBLTGM with the Trust Bank the Gambia. The project partners are committed to ensure the project is implemented in a timely fashion.

When REAP-Canada staff visited the offices of the partners in the Gambia in July of 2003, some problems were also observed in communications, including an erratic power supply and irregular computer and e-mail access. NATC had no direct phone line and no e-mail at the training center. The lack of a reliable internet connection in Njawara Village and the frequent internet disruption the nearest terminals in Kerewan where the partners currently send and receive mails, make communicating with Canada very difficult. The availability of computers is also limited. This lack of facilities increased the difficulty in effective communication between the partners, with the REAP interns and project staff frequently being required to spend two days of travel to Banjul to ensure communications with Canada. The situation has already tremendously improved with the

installment of a telecommunications line at NATC. Arrangements with Quantum net (internet service provider) have been finalized and the installation at NATC will be done immediately.

Finally, during the 2002 planting season, the Gambia experienced a severe drought forcing many farmers to consume all of their produce. This resulted in a lack of significant seed storage, which strongly impacted the following year and led to fluctuating market prices. In 2003, the farmers experienced plentiful rains but were limed by seed supply and unable to produce surplus crops. However, they did produce enough from their stocks to ensure food security. This year, the prices for groundnut cash crops are extremely high due to the scarcity experienced the year before. There is also an ample supply of seeds and farmers are hopeful for plentiful rains again with a fresh understanding of the importance of seed security. Rains customarily begin in the Gambia in mid June. The first rains this year however, came during the first week of June, and have since stopped. This is proving precarious for Gambian farmers in their decision over when to begin planting their field crops, especially the early varieties of millet and maize.

10.0 Public Engagement

Efforts are being made to ensure the public becomes aware of the AEV development approach, both nationally in the Gambia and internationally in other countries including Canada. In the Gambia this includes outreach to the local outlying communities, as well as furthering ties and networking between other developmental and governmental organizations both locally, and nationally in the Gambia to improve their understanding of holistic agricultural programming. The project outcomes will be shared with others in the development community, both in the Gambia and abroad, so that any lessons learned may be applied elsewhere. A development primer on Agro-Ecological Village (AEV) programming is also currently being created in cooperation with our Chinese AEV project partners. This production will detail specifically what is needed, and the methodology used to encourage rural communities to become more self sufficient through sustainable agriculture and ecological production methods. The primer will include lessons on how to assess community needs, developing a custom training program, gender issues, energy use and biofuel consumption, and ecological means to achieve greater self-reliance.

The general Canadian public will be made increasingly aware of the project, promoting a better understanding of North-South issues and increase support for international development. Over the past four years REAP-Canada has participated in considerable public outreach, both within Canada and internationally. Public presentations, seminars, articles and an annual newsletter by the organization have exposed a wide audience to their programming. REAP-Canada's office location on the Macdonald campus of McGill University provides an ideal location to increase awareness of the project to the university community and to introduce students to the field of sustainable development. REAP-Canada regularly attends conferences in Canada where the results of the project are shared. REAP-Canada will continue to relate its programming experiences to academic and public institutions and agricultural communities around the world.

REAP is part of the Canadian Environmental Network (CEN) and other associations which often host conferences and events where public engagement opportunities exist. During the exploratory phase of this project in September of 2003, the director of the NATC, Mr. Badarra Jobe, was scheduled to visit Canada to promote public engagement in Canada and gain an understanding of development efforts in ecological farming, both in Canada and internationally. Unfortunately, Mr.

Jobe's travel visa to Canada was denied and he was unable to complete his visit. Mr. Dawda Kebbeh, Executive Director of VATG, was also subsequently denied admission after an application to visit another conference and public engagement event. Project partners have learned not to expect Visa arrangements allowing passage to Canada will be certain. However, links with the Canadian Embassy in Dakar, Senegal, have been made and preparations have been made for future visits for public engagement purposes.

11.0 Project Reach and AEV Sustainability

In the long-term, the project is anticipated to improve the lives of farmers living in environmentally degraded environments through the widespread adoption of sustainable agriculture techniques and other capacity building activities at the community level. The Agro-ecological Village Model has been implemented because it is locally adaptable and is based on the transfer of sustainable agriculture techniques to whole communities. It has strong potential to spread to other communities in West Africa facing similar agricultural constraints. As the benefits of sustainable community development are realized, the people will have greater household self-reliance through increased income and opportunities.

Over the long term, the project will result in an improved quality of life and a reduction in environmental degradation to the rural farmers targeted as the immediate beneficiaries. It will also develop their social and community networks, improving relations between government offices, technicians and farmers, and between men and women. It will improve the agronomic practices currently being used in remote rural areas and empower rural peasants to take a more active role in their development process through the PRA, farmer-to-farmer training and on-farm trials. The investment in strengthening the farmers' institutions and bottom up training programs are key features of the AEV that will help continue the development process in communities beyond the project's lifespan. The investment in empowering and training farmers generates a high capacity to continue local development. Increased farm income will allow farmers to reinvest capital into newly identified opportunities. The emphasis on ecological farming systems, environmental rehabilitation, and training and capacity enhancement will also ensure the long term protection and regeneration of the agro-ecosystems from which the rural communities economies can continue to evolve.

The Agro-ecological Village development model is distinctive in its ability to bridge the communication and information gap between the masses of peasant farmers, research institutes and the local government. Through its participatory approach and holistic design, it innovatively integrates environmental, agricultural, economic, social and gender development through capacity building, training, education and information exchange. It also demonstrates tangible development measures including farm planning, trial farms and seed distribution. It is a simple and effective model, proven both in the Philippines and in western China, and in almost any rural agrarian community setting. Its participatory methodology allows for high levels of beneficiary ownership, creating long lasting and sustainable results in the community.

ANNEX 1:PROGRAMMES-PROJETS / ANNUAL PROGRAM-PROJECT PROGRESS REPORT

Project Title: The Gambia Ecological Agricultural Development Project

Direction et Division/ Direction and Division **Partnership Branch/ESDP** ***Section:*** **Agriculture** ***Agent de l'ACDI / CIDA Officer:*** **Sylvie Proulx**

Partenaire de la DGPC / CPB Partner: **Resource Efficient Agricultural Production (REAP)-Canada**

DÉBUT / START: January 2004 **FIN / END:** *December 2004*	**PRIORITÉ(S) / PRIORITY(IES):** 40% the environment, 20% women in development, 40% basic human needs	**RÉSULTAT(S) D.G. / BRANCH RESULT(S):** Alleviation of poverty in rural areas by implementing environmentally friendly measures.	**PAYS / COUNTRY(IES):** *The Gambia*
Total Budget: $133,333 **CIDA Contribution**: $ 100,000		OBJECTIFS / OBJECTIVES: **To assist rural communities in the transition to Agro-Ecological Villages through participatory approaches including participatory assessment and evaluation, farm planning for diversification and ecologization, farmer-to-farmer training and the establishment of learning farms.**	BUT(S) / GOAL(S): **To reduce poverty, enhance food security, reduce environmental degradation and encourage the development of gender sensitive self-reliant agrarian communities in some of the most impoverished areas of the Gambia through the implementation of the AEV model**

EXPECTED OUTPUTS	**ACTUAL OUTPUTS**	**VARIANCES**
PRA completed, 2 community PMC's and subcommittees identified and project goals, responsibilities, and specific activities defined. Agricultural constraints and community priorities identified, and action plan developed for ecological agricultural production. 20 farmer-trainers (25% female) trained and the participation of local farmers in farmer-to-farmer trainings. Adaptability trail and learning farms established for rice, agro-forestry, grain legumes, vegetables and warm season grasses. 20 Individual farm plans created for the selected farmer trainers.	PRA was conducted in Njawara from March 26 to 29, 2004, and in Kerr Ardo from March 31 to April 2, 2004. 1 PMC, 2 Project Implementation Teams, 1 Project Technical Team, and one Farmer Trainer group formed. Goals, responsibilities, and activities of each committee defined in project Workplan. PRA report, detailing agricultural and development constraints and priorities of communities, completed and delivered to Project Proponents. Results of PRA used during Participatory Action Planning sessions, resulting in the finalization of a project workplan and action plan for ecological agriculture development. Monitoring and Evaluations Officer recruited, and PM&E framework being developed, PM&E launched with a baseline study. 20 farmer trainers have been trained on ecological methods using ecological farming training modules adapted for the Gambian environment through the GEAD project. Throughout the three training sessions, a total of 141 individual farmer trainings were delivered with an average of 49% female participation. Schedules have been developed for training of farmer trainer and farmer-to-farmer training of community farmers, though farmer-to-farmer training sessions have not yet begun. 2 learning farms initiated with sowing of field crops (millet and findo). A preliminary matrix/schedule for the introduction of improved planting materials and ecological farming methods on learning has been developed and is awaiting substantial rain for implementation. 20 initial farm plans created in total for farmer trainers in both communities.	One PMC was formed instead of the expected two. Project proponents agreed that a common management team for both villages, incorporating the VDC from both communities, would streamline programming and facilitate reporting. Two PITs were created to ensure AEV development corresponds with each community's defined priorities. Actual outputs coincide with expected outputs. Actual outputs coincide with expected outputs. Two learning farms are already initiated and more are waiting the arrival of substantial rain. Farmer trainers are also in the early stages of their training course because of late project start-up, and as such need considerable assistance in establishing learning farms at this stage. Actual outputs coincide with expected outputs.
EXPECTED OUTCOMES	***ACTUAL OUTCOMES***	***VARIANCES***
Communities build capacity in organization and rural development. Community identified constraints are addressed with the development of a workplan for improving agricultural potential and food security. Information exchange between farmers is increased and capacity of first line farmers in training other farmers and spreading knowledge on sustainable agricultural practices is increased. On farm research on improved plant varieties of vegetables, field crops, and tree species, and development of ecological farming practices such as intercropping, sustainable livestock management and agro-forestry Increased farm diversification away from groundnut monocultures, improved crop rotations and increased soil quality.	Subcommittees established that involve the VDC (PMT an PIT) and CBOs established (PTT) and trained on group management, leadership, constitutional development, record keeping, communication, resource management, and PM&E activities. The farmer-to-farmer training network process is also organizing the community around ecological agricultural and a holistic community approach to development. Workplan developed with the PMT (including the VDC) that incorporate community priorities identified through the PRA. Action plan developed that schedules ecological agriculture development activities and the roles and responsibilities of project participants, including beneficiaries. 100% of farmer trainers developing initial farm plans in tandem, incorporating principles from trainings and technical support through on-the-job coaching and input from each other. 100% of farmer trainers trained and planting one tree nurseries in each community for 10 different species to be used in agroforestry interventions. 10% of male and 10% of female farmer trainers already involved in learning farm development and share their experiences through the farmer training network. One female farmer training provided with and began planting 50 g of new vegetable seeds (tomato, cabbage, hot pepper, sweet pepper), two female farmers provided and began planting baobao seedlings for forage development (6 beds of $6m^2$), two male farmers provided and began planting millet and findo crops on their learning farms, 20 farmer trainers establish one tree nursery in each community with 10 multi-purpose tree varieties. Two learning farms are already sowing improved varieties of early millet and groundnut and planning intercropping schemes with several other crops.	The increase in the communities organizational and development skills capacity is noticeable but occurring gradually, as expected at the initial stages of project implementation. The actually outcome coincide with the expected outcome. Information exchange between farmers is occurring at a rapidly increasing rate, as expected for a farmer-to-farmer network that is in its infancy. On farm research is just beginning at the time of reporting, coinciding with the first rains of the season in The Gambia, and is primed to rapidly develop as rains allow farmers to sow and experiment with more crops and ecological farming practices. Learning farm development is occurring at pace with the training of farmer trainers on AEV principles and different ecological methods that can be applied on a learning farm, and is also awaiting substantial rainfall to ensure germination.

EXPECTED IMPACTS	ACTUAL IMPACTS	VARIANCES
Improved ability of local communities to address problems over the long term and sustaining of project initiatives after project completion Project activities address needs of the communities and reflect local potential with increased local ownership. Trainings encourage the widespread implementation of sustainable farming by both men and women in North Bank Divison. Preliminary agricultural diversification provides for increased food security and improved variety of crops produced to supplement nutritional requirements. Improved understanding of ecological farm management practices by local communities	Management structures created through subcommittees and farmer groups are emphasizing the ongoing nature of the ecological practices and participatory methods introduced in the farmer-to-farmer training program. Plant material improvement and learning farm establishment is being lead by farmer trainers of the community, with the support of GEAD project teams. The transfer of AEV methods and technical knowledge through farmer-to-farmer training and learning farm development is developing the confidence in ecological agriculture that will allow the community to approach future agricultural constraints together and holistically. Farmer trainers are actively choosing their specializing in ecological methods and plant materials, and are taking the initiative in dedicating as much of their farmland as can be sacrificed to learning farm training, without jeopardizing food security. Feedback through preliminary PM&E activities is showing enthsiasm among farmer trainers to acquire more skills and knowledge for learning farm development. Sustainable farming methods transferred to beneficiaries during the past two montshs (May and June 2004) are already being implemented by at least four farmer trainers, two of which have already begun establishing learning. Increased communication between farmer trainers and community farmers is creating great potential for the spread of ecological principles and know how within the beneficiary communities. At this early stage of AEV implementation, at least two learning farms, 36 m^2 of Baobao fodder nuresery, 50 g of vegetable seeds nursery, and multi-purpose tree nurseries with 10 different species have been initiated to diversify crops in vegetable gardens and farmland, and increase food security, especially during the next rainy season. Increased understanding of ecological methods among farmer trainers is evident through initiatives taken for early learning farm establishment. Increased communication among farmer trainers and community farmers is developing greater interest in ecological agriculture practices and the AEV approach.	Community is showing increased potential for effectively mobilizing local resources to tackle future agricultural and technical problems, as was anticipated at this early stage of GEAD implementation. Ownership of ecological farming methods is occurring at pace with farmer trainer development. Spread of ecological orientation and understanding of ecological principles and methods is occurring internally within communities, as expected at this stage of AEV implementation. PM&E framework will measure the effectivity of the introduced ecological methods at increasing food security and diversity of crops after harvests and during the next rainy season. Understanding of ecological farm management is spreading at pace with the development of the farmer-to-farmer training network.

Cross-cutting Themes	EXPECTED OUTCOMES	ACTUAL OUTCOMES
IFD & ÉG / WID&GE	Increased participation of women in farming communities, including increased access to farming implements and inputs, economic independence through land and production ownership, and increased representation within the sustainable agriculture movement. Increased literacy through exposure and application of written materials in local languages.	Women having equal opportunity to participate in project activities and act as agents of change through inclusion in project management and implementation. The quality of life of women is expected to improve beyond the lifespan of the project as women engage more fully in the sustainable agriculture movement and take advantage of new agricultural developments At least 10 women in total are farmer trainers in and 49% of farmers trained have been women. Feedback women indicate their involvement in and enjoyment of a wide range of progressive on farm activities, increased control over farm resources and improved decision making in farm and household management Women are being exposed to improved cooking technology, including the MTS reduce cooking time and limit exposure to indoor air pollution and reduce labor required to collect firewood.
ENVIRONNEMENT / ENVIRONMENT	Increased understanding of sustainable agriculture techniques and the importance of the environment and diversification in farm management. Reduced air pollution from crop burning and household cooking Reduction in the use of synthetic pesticides Increased on farm biodiversity Restoration of savannah woodland habitats	Environmental issues integrated into all community activities Project activities focused on long-term rehabilitation of the land while still allowing short term solutions for farmers to combat poverty and unstable weather by diversifying crop production and planting MPTs and improved vegetable and field crop varieties. The use of natural pest control methods by farmers in both communities to reduce the concentration of synthetic chemicals in the regional land and water Increased understanding of the importance of environmental issues by local peoples
ENGAGEMENT DU PUBLIC / PUBLIC ENGAGEMENT	Domestic and international public exposures to programming to encourage support for development	Domestic and international presentations and publications inform a large and varied audience of this project that increased public support and engagement in development activities in the Gambia The project and its achievements will be posted on the new REAP-Canada website.

LESSONS LEARNED

Careful and community approved recruitment of project staff members, ensuring a diversity of backgrounds, age groups, and equal gender representation creates a dynamic working and learning environment. Problem solving, even under time constraints such as the approach of the planting season, is enhanced through increased commitment to projects that incorporate deliver a sense of ownership to all participants.
Research into efficient money transfer mechanism into developing countries can avoid delays that hinder project implementation or limit the purchase of necessary materials.
Efficient communication systems (email, phone, fax) are critical for effective management in international development programs. Investing in strong and open relationships between project proponents is a great help in times of limited communication due to technical difficulties.
Gambia is the third country of in which REAP is developing AEV programming, and it is more evident that the concepts holistic approach of the AEV are not limited to any culture or environment, but are relevant in most agricultural communities that are facing ecological collapse due to unsustainable farming methods.

FOR CIDA USE ONLY

Rating of the program or project: *(The rating provides an overview of the program or project progress and performance to date and should be selected based on the **officer's** understanding of the program or project (and not the partners').) Use the % of progress in achieving outputs and outcomes and the following scale:*

- *a - project/program is likely to exceed expected results;*
- *b - project is viable and progressing satisfactorily;*
- *c - project has problems that are manageable;*
- *d - project has serious problems requiring major corrective actions and is unlikely to achieve expected results;*
- *e - unable to rate: provide reason e.g. "Too soon to tell".)*

Financial risks: *(As indicated in last FRAU report.)*

Sign off: Officer _____ Director

ANNEX 2: PARTNER ROLES AND RESPONSIBILITIES

Breakdown of GEAD Phase I Partner Roles and Responsibilities							
Activity	**Timeline for implementation**	**Budgetary Allotment**	**Roles and Responsibilities** *(X indicates responsibility, XX primary responsibility)*				
			REAP	**NATC**	**NARI**	**Farmers Groups**	**Outside Consultants**
Project Management							
Project status reporting and contract mgt with CIDA			**XX**				
Joint project review, assessment and planning			**X**	*XX*	**X**	*X*	
Coordination of Implementing Partners			**X**	**XX**	**X**	**X**	
Field Level Reporting			**X**	**XX**	**XX**	**X**	
Field Site Monitoring			**X**	**XX**	*XX*	**X**	
Activity report consolidation				**XX**	**X**		
Financial Management							
Overall financial report consolidation to CIDA			**XX**				
Financial report consolidation – Gambian expenditures				*XX*	*X*		
Documentation of finances, bookkeeping and accounting of individual budget allocations			**X**	*XX*	**X**		
Audit – Gambian Operations				**XX**			
Baseline data gathering and surveys							
Collection / processing of required baseline community data, initial agroecological asessment of farming systems			**X**	**XX**	**X**		
Development and Analysis of socio-economic data			**XX**	**XX**	**X**		
PM&E Program			**X**	**XX**	**X**	**X**	
Monitoring of Participatory on-farm research			**X**	**X**	**X**	**XX**	
Case Study Development			**XX**				
Institutional Building Process							
Perform Participatory Rural Appraisal			**X**	**XX**	**X**		**XX**
Participate in participatory rural appraisal			**X**	**X**	**X**	**XX**	**X**
Strengthening the capacity of Farmer's Organizations			**X**	**XX**	**XX**		**X**
Community organizing/education & training			**X**	**XX**	**XX**	**X**	**X**
Capacity building							
Develop training modules			**X X**	**X**	**X**	**X**	
Initial Training of Farmer Trainers			**X**	**XX**	**X X**	**X**	**X**

Perform farmer-to-farmer trainings						*XX*	
Ongoing Training of Farmer Trainers				**X X**	**X X**	**X**	**X**
Technical support to farmers' initiatives			**X**	**X**	**X**	**X**	*X*
Develop individual ecological farm plans			**X**	**X**	**X**	**XX**	
Develop project gender strategy.			**X**	**XX**	**X**	**X**	
Implement project gender strategy.			**X**	**XX**	**X**	**X**	
Field Level implementation							
Participatory on-farm research			**X**	**X**	**X**	**XX**	
Learning Farm Implementation			**X**	**X**	**X**	**X X**	
Technical Support for learning farms							
Intercropping			**X**	**X**	**X**		**X**
Vegetable /grain legume production			**X**	**X**	**X**		**X**
Soil fertility management			**X**	**X**	**X**		**X**
Livestock Management			**X**	**X**	**X**		**X**
Weatherproofing farms			**X**	**X**	**X**		**X**
Technical Support for plant material improvement							
Rice			**X**	**X**	**X**		**X**
Vegetables			**X**	**X**	**X**		**X**
Agro-forestry			**X**	**X**	**X**		**X**
Forage improvement			**X**	**X**	**X**		**X**
Research and Development of Mayon Turbo Stove and sustainable cooking appropriate technologies			**X**	**XX**	**X**		**X**
Communications and public engagement							
Disseminate information to the public through conferences, publications, websites and presentations to interested parties			**XX**	**X**	**X**		