

Increasing the Capacity of Regenerative Agriculture Resource Centers: Rodale Institute's Projects in Senegal and Guatemala

Second Annual Report

September 29, 1993 - September 29, 1994

submitted to the USAID FHA/PVC Matching Grant Program

Summary

of Program, Administrative, and Financial Status

The goal of the PVO Matching Grant to Rodale Institute supporting RARC development is to increase low-income farmers' capacities in Africa and Latin America to more effectively manage their natural resources to meet their immediate food, fiber, fodder, and fuel needs while enhancing future resource productivity. More than 9000 men and women farmers benefitted from exposure to new technologies and information through Senegal RARC activities in 1993-94. In Guatemala, an estimated 5000 men and women received this benefit in 1993-94. Women's participation in research, training, and information exchange activities at the Senegal RARC rose to 32% in 1993.

Implementation of the participatory monitoring and evaluation (M&E) system began in late 1993 at both RARCs. Project impacts are measured in terms of how many collaborating farmers have been trained, and how many are now using regenerative technologies, since the onset of the RARC projects. An M&E methodology at both projects was absent prior to implementation of the PVO Matching Grant. Project staffs at both RARCs have a comprehensive working knowledge about M&E as a result of the Matching Grant. Some members of each RARC staff are capable of training other organizations in M&E, using a modified logical framework approach.

Rodale Institute experienced minor expenditure variances during the second fiscal year for the use of USAID financial support. The Institute has matched 2.2 dollars of match for every dollar of USAID support and expects to maintain a significant level of matching funds contribution (2 : 1). An amendment to the original contractual match agreement (2.8 : 1) is being requested. There are no changes in budget line items for the remaining project year. Lessons learned are as follows:

In Senegal:

- 1) Some funds in the travel budget could be better used for M&E data collection and analysis, applied to personnel as well as direct operational costs;
- 2) The newsletter operations budget could be better applied to personnel to develop technical sheets, rather than applied to other direct costs;
- 3) Additional funds could have been budgeted for consultant time to ensure that the RARC staff prioritize their M&E activities.

In Guatemala:

- 1) As for Senegal, some of the travel budget could be better used for M&E data collection and analysis, applied to personnel as well as direct operational costs;
- 2) Additional funds expended for the M&E consultant have helped to ensure that M&E was prioritized at the project level, and that follow-up activity occurred.

In Senegal, the PVO Matching Grant has contributed to institutional development by providing support during 1992-94 for activities that have attracted the interest of in-country donors and those who need training services. More than \$40,000 has been obtained in less than two years via training services. The RARC is on schedule to be 80% financially independent by 1999.

At Centro Maya, two strategic vehicles are being used to raise financial support for its activities in the future: A Guatemalan institution, "Foundation for the Development of Mayan Ecosystems,"

which will work to obtain operating funds for Centro Maya; and the International Program office of Rodale Institute, working in conjunction with the Institute's Development Office and Rodale Program Associate consultants.

The sustainability of the Senegal and Guatemalan RARCs is favorable, due to the tremendous accomplishments at the community level, and the visibility garnered at the government and donor levels. While Rodale Institute can claim success today, the task of making each RARC more sustainable remains. Rodale Institute anticipates being directly involved in Senegal for an additional three years, and an additional four years in Guatemala.

Recommendations include:

- * Continue to follow the RARC methodology, building on its strengths: on-farm applied research, education and training, information exchange, networking, partnerships, communications, and a focus on biological processes;
- * Increase the participation of women farmers in RARC projects by focusing on them as direct beneficiaries beginning in 1995, and by continuing to staff the RARCs with women;
- * Continue to develop, use, and refine the M&E system of the RARCs by integrating the Natural Resource Management Analytical Framework into the M&E process;
- * Improve time management (at the Senegal RARC) with respect to the integration of M&E into on-going activities by using the period November, 1994 - March, 1995 exclusively for M&E;
- * Encourage RARC staff members to offer M&E training workshops to other NGOs and PVOs;
- * Realize a follow-up visit by Rodale Institute's Financial Officer and Development Officers to each RARC project in early 1995;
- * Explore the potential for private sector partnerships for both RARCs;
- * Focus on the production of training materials for Peace Corps and other NGOs/PVOs in 1995;
- * Make greater use of the radio, films and videos, and electronic networks at both RARCs in cooperation with Rodale Institute Headquarters;
- * Conduct the external assessments in January, 1995 at the Senegal RARC, and in February, 1995 at Centro Maya;
- * Work more closely with the DESFIL project to document the number of farmers who have received training in various technologies and the number of farmers who now practice these technologies on their farms;
- * Continue to promote the idea that communities ought to have a greater role in the management of project funds, and encourage them to sub-contract with NGOs for services, holding the NGOs as accountable as the communities for commitments;
- * Identify a site for the fourth RARC (in addition to Senegal, Guatemala, and Russia, which was initiated in June, 1994).

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I. Background to Grant and Project Context

1. Rodale Institute (RI) provides leadership to individuals and organizations developing and promoting regenerative agricultural technologies, those which are environmentally sound and economically viable. The regenerative management model focuses on recycling and rebuilding local resources for social and economic benefits rather than depleting them. RI's fundamental mission is to work with people worldwide to produce a healthy and abundant food supply while preserving and renewing tomorrow's resources. This mission is met through applied research, education and training, development of information exchange networks, and participation in policy planning and implementation. In this way, RI advances the long-term well-being of people by improving their capacity to interact with and improve the world's natural resource base.

Rodale Institute (RI) originated as the Soil and Health Foundation in 1947, established by the founder of Rodale Press, Inc., J.I. Rodale. The RI staff is comprised of 65 people, including 34 professional program staff members, seven of whom have Ph.Ds and extensive research and international experience. RI's Board of Directors includes members from academia, business, and non-profit organizations. Planning and budgeting is managed by a professional staff headed by a CPA. With a budget of \$5.1 million, RI operates primarily with private donations and grants.

Rodale Institute (RI) has three very unique institutional capabilities: 1) a Research Center in the U.S.; 2) an International Program; and 3) a publishing and printing capacity backed up by its working relationship with the Rodale Press. At its 333-acre Research Center, scientists evaluate regenerative agricultural land use systems. RI maintains a U.S. network of cooperating farmers who provide leadership for on-farm research and outreach. RI also publishes books on agriculture, and a magazine, *The New Farm*, which contains practical, easy to understand information about technologies farmers can readily use.

Rodale Institute's International Program was organized in 1985 to develop global networks for sharing information on regenerative agriculture, natural resource management, and community development. The International Program works with government, non-government, and multi-lateral institutions. A primary strategy of the International Program is to develop Regenerative Agriculture Resource Centers, or RARCs. The first RARC was established in Senegal in 1987, and a second RARC was established in Guatemala in 1992, called Centro Maya. A third RARC, in Russia, is in its early stages of development. The International Program also publishes the *International Ag-Sieve*, a bi-monthly bulletin of current information about regenerative agriculture worldwide. The Senegal RARC publishes *Entre Nous*, a bi-monthly, French-language bulletin for disseminating information about regenerative agriculture in the semi-arid tropics.

Via the RARC projects, Rodale Institute's strategic goal is to increase the availability of technical information and training options to men and women farmers. This strategy enables the projects to have direct impact on people's capacities to manage food production using skills and technologies to regenerate local resources. The short-term goal of each RARC is to build partnerships among local, national, and international leaders, agricultural practitioners, and policy-makers at all levels for the widespread application of regenerative agriculture principles. Adhering to these principles, the long-term goal of each RARC project is increased food sufficiency for rural communities and decreased dependence upon purchased inputs for food production.

The purpose of the RARC projects is to build national capacity to manage local resources more effectively by: 1) Gathering and disseminating information on regenerative natural resource management; 2) Increasing community members' capacity to evaluate regenerative agricultural technologies; 3) Encouraging farmers to communicate their traditional and innovative technical information among themselves, to scientists, and to policy-makers; 4) Promote the multiplication of technologies most appropriate to regenerative natural resource management.

The socio-economic and political conditions and circumstances that gave rise to the RARC projects, and to the PVO Matching Grant, are linked to the limited capacity of low-income farmers in Africa and Latin America to effectively manage their natural resources in order to meet their immediate and long-term food, fuel, fiber, and fodder needs. People's demands for food, fuel, fiber, and fodder are expected to rise in the years to come. Thus, several issues are increasingly compelling: 1) Environmental health and people's well-being are not separate; 2) Agricultural productivity must improve without harm to the environment; 3) Income opportunities for farmers must increase; 4) Safe food must be available to increasing numbers of consumers.

Senegal and Guatemala are beset with socio-economic and natural resource management problems that are familiar to developing nations: seasonal nutritional deficits; population growth outpacing productivity; rural-to-urban migration (especially by young men); and high rates of youth unemployment. Senegal faces the annual specter of drought, while Guatemala wrestles with political issues that remain from civil war and unequal access to resources. Each nation's socio-economic problems are surrounded by questions related to political strength and the implementation of agricultural policies. Senegal has an advantage of relative political stability and a history of democratic institutions, but the International Monetary Fund (IMF) structural readjustment program continues to erode the purchasing power of many consumers. This dilemma was accentuated by the devaluation of the West African franc (CFA) in January, 1994.

On the other hand, one reason why RI's Senegal RARC project is so appropriate and popular today is that subsidies of petrochemical fertilizers have been eliminated as part of the IMF package. This policy change has forced Senegalese farmers to find alternatives to maintain soil productivity. The RARC projects offer several viable agricultural production options. A similar situation with petrochemical inputs to agriculture is likely to occur in Guatemala. The RARC project model represents the type of institutional leadership people need so they can learn how to use local resources to solve their food production problems.

Farmers in Senegal and Guatemala have had little voice in shaping national agricultural policies. This is due in large part to the educational levels of Senegalese and Guatemalan farmers, which significantly limits their access to information. The RARC projects have little capacity to provide basic education, but they do facilitate verbal and written information exchanges among farmers and educated professionals. The Senegal and Guatemala RARC projects alleviate farmers' essential informational constraints including: 1) a low level of awareness and availability of alternative technologies for sustaining natural resource productivity; 2) ineffective methodologies to facilitate community-based technology development and evaluation; 3) weak farmer-to-farmer and farmer-to-researcher institutional networks; and 4) inadequate national capacities for assessing the impact on people's lives due to development project activities.

Requests from the national level to alleviate such constraints in Senegal and Guatemala resulted in the RARC presence in these two countries. Because the RARC model meets informational demands about natural resource productivity alternatives, the RARC emphasis is to strengthen existing, biological and institutional systems nationally and locally. Upon formal establishment of the RARCs in Senegal and Guatemala, project activities continued to be demand-driven within the scope of Rodale Institute's capabilities. The process underway in Senegal and Guatemala is that farming communities request assistance, identify their problems, and decide what applied research,

training, and information is needed. Selection of the activities depends upon a non-formal needs assessment involving local men and women farmers.

In summary, the fundamental RARC strategy in Senegal¹ and Guatemala is to increase the availability of technical information to men and women farmers. In providing this information, the RARC projects have impacts on people's capacities to manage food production using techniques to regenerate local natural resources, namely soils.

2. The RARC projects in Senegal and Guatemala have been well-received and successful to date because no other national or international NGOs, nor government institutions, were meeting the specific information needs of farmers regarding regenerative agriculture, a concept that Rodale Institute has pioneered. Prior to establishment of the Senegal RARC, community-based development and evaluation of regenerative agricultural technologies did not exist, nor did a French-language information bulletin about regenerative agriculture. These initiatives are now in place in Guatemala as well, except that a weekly radio program has been substituted for printed information. Furthermore, both RARC projects have developed and implemented a participatory monitoring & evaluation (M&E) system that elicits staff and farmer input about impact indicators. As a result, governmental and NGO institutions in Senegal and Guatemala that have frequent contact with the RARC project acknowledge the importance of such M&E system.

II. Project Methodology

1. Summary of project goal, purpose, objectives, methodology, and strategy:

The objectives of the PVO Matching Grant project titled, "Increasing the Capacity of Regenerative Agriculture Resource Centers (RARCs)", are defined by the grant project's goal, purpose, and the expected outputs that will result from project funding.

The goal of the PVO Matching Grant to Rodale Institute supporting RARC development is to increase low-income farmers' capacities in Africa and Latin America to more effectively manage their natural resources to meet their immediate needs for food, fiber, fodder, and fuel while at the same time enhancing future resource productivity.

The purpose of the PVO Matching Grant is three-dimensional: 1) Increase the availability and use of information about regenerative agriculture to NGOs, PVOs, governmental organizations, and men and women farmers; 2) Increase the effectiveness, efficiency, and impact of the RARCs; and 3) Identify two additional locations for the adaptation and replication of the RARC model.

The project strategy is to develop RARCs to work with men and women farmers, NGOs, and government institutions, improving their capacity to integrate natural resource management concepts into food, fuel, fiber, and fodder production systems. The RARCs combine grassroots community action, institution building, and a technology adaptation process whose foundation is indigenous technologies and systems. RARCs engender long-term sustainability of this process by building networks, often for the first time ever, of farmers, researchers, NGOs, government institutions, and the like. The strategic emphasis is to strengthen existing systems, consolidate the lessons learned, and refine the RARC approach so that the model can be adapted and replicated.

Key strategic inputs and activities are:

- 1) A RARC Coordinator will be employed at Rodale Institute (RI) headquarters to:
 - a) provide overall management of individual RARCs, coordinate the flow of information and technical integration of RARC programs with RI programs;
 - b) develop and manage an international accounting and auditing system for RARCs;

- c) develop long-term strategies for financial sustainability of the RARCs as future independent national institutions;
 - d) manage ongoing monitoring and evaluation; and
 - e) participate in the development of new RARCs;
- 2) An assessment of the effectiveness and impact of program strategies to refine the RARC programs in Senegal and Guatemala will be made;
 - 3) Internal systems for accounting and reporting will be developed and strengthened;
 - 4) The linkages between RI and the RARCs will be strengthened in order to facilitate the management and dissemination of information;
 - 5) Outreach related to technology development will be expanded in order to assist men and women farmers and indigenous resource institutions to better manage their natural resources;
 - 6) Two additional sites for RARC replication and their future collaborators will be identified, and initial funding strategies and proposals will be developed; and
 - 7) Rodale Institute will continue to support the RARCs through research, information gathering and dissemination, and technical assistance.

Expected project outputs are:

- 1) An effective systematic methodology of monitoring and evaluation project impact;
- 2) Streamlined accounting and reporting systems;
- 3) Improved information for increased communications between Rodale Institute and the RARCs, and increased communication between the RARCs and a larger audience;
- 4) Program evaluations in Senegal and Guatemala;
- 5) At least three staff per RARC trained in monitoring and evaluation methodologies, report preparation, accounting, and information systems delivery;
- 6) In Senegal, more effective and more widely distributed publications including an increase in *Entre Nous* circulation to 1000, at least six press releases per year on regenerative agriculture technologies to major Senegalese newspapers, especially *Le Soleil*, as well as radio stations;
- 6) A series of three annual training workshops for Peace Corps and other NGOs;
- 7) Four or five trained Peace Corps volunteers working in Senegal's Thies region;
- 8) In Senegal, one technology brochure with poster (Year 1), three technology brochures with poster (Year 2); five technology brochures with poster (Year 3); one brochure on process or methodology (each year);
- 9) Host country agreements signed and workplans prepared for new RARCs, initial funding strategies developed, and collaborators identified;
- 10) Plans developed for RARC organizational and financial sustainability.

The project approach or methodology builds on Rodale Institute's strengths, which are agricultural research, information exchange, networking, the ability to bring disparate groups and institutions together, communications, and a focus on biological processes. In addition, Rodale Institute is the only PVO in grassroots development with its own research station capable of providing technical support to international projects. The RI experience to date in Senegal and Guatemala has been successful thus far in expanding the scope of agricultural research, which now includes the on-farm evaluation of regenerative technologies such as compost and intercropping legumes with grains, and the process of drawing farmers into technology design and assessment.

Whether the task is development of an impact monitoring and evaluation system, the generation and dissemination of educational materials about regenerative agriculture, or building networks between farmers and institutions, the RARC approach remains the same: Encourage individual and institutional collaboration in research and demonstration, training workshops, and information exchange about regenerative agriculture. The project methodology is marked by participation in decision-making at the community level about technology development and assessment. This goes beyond the type of participation where a farmer hosts an experiment in a field and is thus said to be participating. The RARC methodology contributes to a process of democratization, where each participant's opinion has a chance to be heard and considered by the various project collaborators. The monitoring and evaluation system for measuring project impact adheres to this methodology as well, particularly at the RARC staff and community levels.

Overall, the RARC projects have significant impacts not only on farm families, but also on the local environment, on community development processes, and on institutional policies that affect natural resource management. Women in particular benefit from the gardening activities that provide them greater access to capital and a more options to improve family nutrition. The environment benefits from a closer integration of soil-improving leguminous plants, forage and fodder species, and livestock into cropping systems. Increases in vegetal cover and available manure improves nutrient recycling, soil structure, soil conservation, and soil nutrient status. The community development process benefits from enhanced participation in project decision-making by rural residents, from income-generating activities like gardening and livestock fattening, and from closer cooperation between Rodale Institute and various institutions and organizations. The RARC projects also nurture cooperation among non-government and government institutions and encourages these institutions to consider low-input options to improve agricultural production. These institutions are making more concerted efforts to place farmers at the forefront of decision-making about agricultural research and development.

The RARC projects benefit people and the environment. In Senegal in 1993, more than 9000 men and women benefitted from exposure to new technologies and information via RARC activities. In Guatemala, an estimated 5000 men and women received this benefit in 1993, increasing to nearly 10,000 beneficiaries in 1994, a figure based on community populations. Direct participants in the RARC projects are small-scale farmers who confront deprived living conditions and chronic hunger every day as they grow virtually all of their food. Families benefit from improved nutrition resulting from increased grain yields (evidenced by field tests of compost, rock phosphate, and nitrogen-fixing leguminous plants), more food choices (from gardening), increased household revenue (from gardening and livestock fattening), better quality of local and regional water supplies (from soil erosion control), better management of local forest resources, and a greater public voice in determining future Senegalese and Guatemalan agricultural policy.

The specific target groups for the RARC projects in Senegal and Guatemala are men and women farmers, their families, and other members of their farming communities. These men and women generally fit the following profile: annual income of \$400 - \$1000; life expectancy at birth of 45 to 65 years; daily per capita calorie supply of 2000 to 2500 (at the margin of malnourishment). In Senegal, most of these farmers neither read nor write French, the official administrative language. Most speak Wolof, and many speak at least one other Senegalese language. A small fraction read

and write Koranic Arabic. The vast majority are Muslim. Most of these farmers are members of farmers' associations which have a recognized legal status in Senegal. These associations comprise the Senegal RARC project's primary target group.

In Guatemala, most of the farmers speak Spanish though some speak only an indigenous language such as Maya or Kekchi. Most are Christian. In the Peten region of Guatemala, where all of the Centro Maya RARC activities are realized, farmers' associations are not well-established as legal entities. Nevertheless, in 1993, a total of 355 farmers are testing, in their fields, a soil-improving legume, *Mucuna pruriens* as part of a collaborative research effort to stabilize shifting cultivation. In 1994, a total of 330 farmers participated in these activities.

To maintain and increase the participation of women farmers RARC project activities in Senegal and Guatemala, the activities address an improvement in the productivity of local natural resources, an increase in women's access to information and services about agricultural technology, while building women's organizational and leadership capacities and supporting natural resource-based enterprise development managed by women. This strategy has enabled the RARC project in both nations and elsewhere to initiate and mark its success.

To strengthen women's participation in existing RARC project activities, additional affirmative action will be needed. The best way to improve women's participation in project activities would be to hire a woman as project director, or a comparable upper management role. This remains a viable option for the Senegal RARC in 1995, but is not likely for the Guatemala RARC in the near future. Just the same, in 1993 and 1994, the RARCs made significant progress in staffing the project with women professionals. At the Senegal RARC, three of nine staff members are women. In Guatemala, two women have been hired for the technical staff, up from zero in 1993. The role of women in agricultural production in the Peten is not as pronounced as compared to women's role in Senegal. Yet there is undoubtedly a strong influence at the household level in Guatemala regarding family income, nutrition, and the management of household resources. Nevertheless, the recruitment of women professionals is decidedly more problematic for several reasons: 1) smaller applicant pools of qualified women; 2) fewer opportunities for women professionals to coordinate professional and domestic responsibilities; and 3) fewer incentives for women professionals to live and work away from urban centers. All three of these constraints have figured in both RARCs' staffing strategies.

In Senegal, the RARC staff provides direct training in regenerative agricultural techniques to some 500-700 farmers each year. RI has worked to increase women's participation in research, training, and information exchange activities, boosting participation by women in 1993 to 32%. RI's goal for increasing women's participation in Senegal is 40% by the end of 1995 (revised downward from 50%). For the Guatemalan RARC, 20% by the end of 1995 is a more realistic target. Most women farmers' activities coordinated by the Senegal RARC have focused on gardening and compost production, but women farmers have expressed their desire for more information and training on livestock fattening, primarily sheep and goats. As both gardening and livestock fattening have demonstrated good potential to generate household income and improve family nutrition, this may also be an appropriate strategy for Centro Maya.

RI has not been successful in attracting funds to explicitly strengthen women's participation in each RARC's activities. At the Senegal RARC, Ms. Diagne Sarr was seconded to the RARC project by the Senegalese Ministry of Women, Families, and Children. As Women's Network Coordinator, Ms. Sarr works with women extension workers (rural animators), primarily in gardening.

2. A comparison of project accomplishments with those originally proposed for the reporting period (September 29, 1993 - September 29, 1994):

<u>Proposed</u>	<u>Accomplished</u>	<u>Comments/Reasons for Variance</u>
Annual report Centro Maya	Partially	A technical report for 1993-94 is available
Annual report Senegal	For 1991-92	The 1993-94 report is being written
Visit Centro Maya	Yes	In December, 1993; April, 1994; June, 1994; September, 1994
Visit Senegal	Yes	In October, 1993; February, 1994
Baseline info Centro Maya	Yes	In form of <i>sondeo</i> surveys
Consultant in Centro Maya	Yes	(John Sabella) in December, 1993; April, 1994; September, 1994; and July, 1993
Consultant in Senegal	Yes	(William Roberts) in January, 1994; June, 1994
Hire Centro Maya M&E Coordinator	Yes	Hired in previous reporting period (Juan Manuel Herrera)
Hire Senegal M&E Coordinator	Yes	Hired in previous reporting period (Moustapha Diouf), replaced in January, 1994, due to illness; M&E duties assumed by Amadou Diop.
Data Collection Centro Maya	Yes	On-going collection, analysis forthcoming
Data Collection Senegal	Yes	On-going collection, analysis forthcoming
National staff trip Centro Maya	Yes	In October, 1993 (two staff members); June, 1994 (two staff members)
National staff trip Senegal	Yes	In July, 1993 (three staff members)
Senegal Entre Nous (6 per year)	Yes	Sample copy enclosed
Senegal brochures/posters	Yes	Sample enclosed
Senegal technical info release (6)	Partially	Drafts completed
Workshop Series - Senegal	Yes	Many workshops conducted (see below)
Workshop Series - Centro Maya	Yes	Many workshops conducted (see below)
RARC Selection, Sites 3&4	Partially	Site 3 selected (Russia); Site 4 (several candidates; selection to be made in 1995)
Hire RARC Coordinator	Yes	(Jonathon Landeck) Hired in May, 1992, named International Program Director, January, 1994, retains RARC Coordinator function
Senegal - Sustainability Plan	Yes	Enclosed
Centro Maya - Sustainability Plan	Yes	Enclosed

Rodale Institute anticipates no problems in meeting the project's expected outcomes by the end of the Matching Grant period, but will require a strong effort to complete the 18 technical fact sheets (one-page, double-sided) as planned. To date, 12 fact sheets should have been produced, but only six have been produced in draft form. The staff time required to continually publish *Entre Nous*, and to develop the compost slide set training tool, has made it difficult to produce the fact sheets.

Full-scale implementation of the M&E system began in late 1993 at both RARC project sites. The baseline information requirement for Centro Maya has been met by conducting a *sondeo* (survey)

in each collaborating community. For Senegal, baseline data remains problematic because, as explained in the previous report, the RARC project has been operational for six years, and these data were not collected at the debut. In January, 1994, baseline data for compost utilization and the integration of livestock fattening systems into cropping systems began.

Gender analysis consists of citing participation rates in project activities. In Senegal, the addition of Ms. Diagne Sarr, who is seconded to the RARC project from Senegal's Ministry of Women, Children, and Families, has facilitated the participation of women in project activities. At Centro Maya, the hiring of a woman sociologist in December, 1993, to the project staff using counterpart funds appeared to be a great solution to integrating more women into the project's activities. All went well and according to plan for the first half of 1994 but, in June, 1994, the sociologist was released from the project due to differences of opinion regarding work responsibilities with Centro Maya's General Coordinator (who is employed using Government of Guatemala funds).

III. Monitoring and Evaluation

1. a) Baseline data:

Baseline data collection has been problematic for Senegal, except for data that have been gathered during the first and second years of the PVO Matching Grant. Impacts are measured in terms of how many collaborating farmers have been trained, and how many are now using regenerative technologies, since the onset of the the RARC project when none of these farmers were using the technologies. An M&E methodology at both projects was absent prior to implementation of the Matching Grant. Now the project staff at both RARCs have a comprehensive working knowledge about M&E. In fact, members of each RARC staff are training other organizations in M&E, using a modified logical framework approach.

b) Targets for the reporting period:

- * Monthly reports from Senegal and Guatemala to headquarters (achieved without fault);
- * RARC Coordinator makes a minimum of two trips each year to each RARC site (achieved for Senegal and exceeded for Guatemala);
- * Director of International Program makes at least one trip each year to each site (exceeded for Guatemala, one trip behind for Senegal);
- * In-country staff visits cooperating communities approximately once per month (achieved and exceeded by RARC);
- * New monitoring/training staff person in both countries conducts on-site monitoring based on methodology and system set up by consultant (achieved by both RARCs);
- * Specific methodology and system for evaluation to be developed and implemented in Senegal and in Guatemala (achieved at both RARCs);
- * Initial evaluation/baseline survey completed. Baseline data collection at the Senegal RARC is inadequate because the project was in operation for six years prior to implementation of the system, and is not inhibiting monitoring and evaluation of on-going activities. In Guatemala, baseline data collection has been achieved through the use of *sondeo* surveys, although the data have not been fully analyzed).

c) Critical indicators of effectiveness:

Senegal RARC

Major categories of expected project outcomes and their impacts, using illustrative examples:

Applied research & demonstration

An illustrative example of applied research in regenerative gardening is incorporation of the leguminous plant, *Dolichos biflorus*, into the soil of experimental plots as green manure for onions and tomatoes. This experiment was set up in three communities in early 1994.

Farmers report that the repopularization of millet/cowpea associations, which is being promoted by the RARC, saves time cultivating their crops. The crops are located in the same field, making better use of limited land resources, as well as contributing to weed suppression.

For the legume screening trials at Koumpentoum, *Acacia olo* and *Acacia senegal* appear to be the most promising species with respect to resistance to browsing from animals.

Another example of applied research and demonstration is the case of Ndiamasil, where farmers are fattening cattle, goats, sheep, and horses to increase manure availability and household income. In this community, after eleven months of animal fattening demonstrations, 12 farmers have adopted this practice. Four farmers have totally reimbursed the original capital investment from the community's revolving fund.

All of these farmers stocked their farms with enough hay for the second (1993) and third (1994) rounds of fattening. One technique used at Ndiamasil which works well is to mix water with 500 grams of millet and feed this mixture to the stabled cattle twice a day, morning and night. This technique has resulted in an average daily gain of 935 grams (outstanding). Farmers estimate that stabling one head of cattle for four months provides enough manure for one hectare of cropland.

Livestock fattening has also been successful at Baback, one-half of community participants have reimbursed the initial investment loan from the community revolving fund. Here, the average daily gain has averaged 840 grams (very good). The feed mix consisted primarily of leaves of wild plants, peanut hulls, and dried cowpea residues.

In the northern part of Senegal, in and around the Thies region, it is becoming more evident that compost production is most beneficial when used in combination with natural rock phosphate (at an application rate of 30 kg/hectare, roughly equivalent to 30 lbs/acre). This is true for millet crops as well as millet/cowpea associations. Nevertheless, there is an issue in some farm communities of purchasing the rock phosphate, which is mined and processed near Thies. The principal constraint is primarily cost, but sometimes a question of availability.

The forage feed garden program is well-established. Pigeon pea (*Cajanus cajan*) has not proven to be resistant to severe cutting and the RARC wants to avoid discouraging livestock owners from using this technique simply because of improper harvest methods. At Samba Dia, the feed garden is in full production after two years of extension work. The trees, *Leucaena leucocephala* and *Gliricidia sepium*, and the perennial grass, *Andropogon gayanus*, have shown vigorous growth.

For gardening activities, in Gade Khaye, the neem insecticide trials to determine the proper dosage for roma tomatoes (400 kg produced, value of 40,000 CFA, or about \$70.00), it appears that one measure (a matchbox) of neem tree fruit powder per liter of water, applied once per week, is the most effective dose, with no reported damage in 1994 by two traditional pests, *Heliothis armigera* and *Rhizoctonia solani*. Yields from treatment plots were significantly greater than the control.

The "Basket Composting" trial at Gade Khaye with eggplant, replicated three times, resulted in an extrapolated per hectare yield of 7.45 metric tons (at 125 CFA/kg, that translates to a market value of \$1619 per hectare). The technique requires some finetuning by the women participating in the trial. The women gardeners of Gade Khaye were able to purchase a calf for fattening with the profits obtained from their gardening activities.

In Ngombel, the first year (1994) of tomato gardening by the women's group resulted in a yield of 76.6 kg from 90 square meters (having a market value of 12,200 CFA or \$21.22). The women experienced significant insect damage, most pronounced in compost treated plots (where 133 fruits were attacked). Lower yields in the manured plots and the control plots may have been a factor in the lower number of fruits attacked in these plots (39 fruits attacked in the manured plots, 34 fruits attacked in the control). Vegetative growth in the composted plots was more pronounced as well, where fruit plus vegetal biomass per plant led to more plant-soil contact and a better opportunity for pest damage. Some combination of compost, better staking, and neem powder insecticide is in order. Results of the demonstration trial of manure and compost treated tomato plots, variety *xina*, were: No manure (13 tons/ha); manure only (14 tons/ha); and manure plus compost (23 tons/ha).

A monitoring and evaluation (M&E) mission to assess compost use under the Southern Zone Water Management Project (PROGES) was completed in Sidhiou, Bignona, and Ziguinchor. This was the fourth such M&E mission in 1994. Eight valleys were included in the evaluation (Badobar, Balinghor, Bona, Diatang, Kandio Mangana, Mayor, Njamande, et Segafoulaet).

M&E data sheets for compost production and animal fattening have been distributed to intern trainees in Ndiamsil Fall and Baback for completion.

Training & education

A spectacular increase of compost use in the Casamance region of Senegal following several training sessions on compost use by the RARC staff occurred in 1993-94. A total of 129 farmers in Casamance have initiated compost production, bringing the total of cooperating farmers who are composting to 189. Twenty (20) of these pits are maintained by women. The most important compost use training sessions were offered in 1994 to several hundred farmers participating in the USAID-funded Southern Zone Water Management Project (317 total, including 130 women). As a result of this training, 65 compost pits were set up in two months.

Fourteen young professional Senegalese (two women), plus two from the Comoros Islands, have been interns in regenerative agriculture or project administration during 1994 thus far at the RARC.

Regenerative agriculture training activities for the group of technicians (four men, two women) from USAID's NRM project in Fouta Djallon, Guinea occurred in July-August. Integrated into the training program was the planting of more *Prosopis* trees along field contours. Training themes included participatory methodologies, biological plant protection, composting, agroforestry, and monitoring and evaluation. The training curriculum included practical sessions, films, slide set information, and field visits.

Professors at Senegal's Horticulture Practical Training Center would like to use some of the RARC's experiences and information about regenerative agriculture in their training curricula.

Networking & communication

Improved, more substantive collaboration between the the Arid Lands Information Network and the RARC is underway. An ALIN/OXFAM library was set up at the RARC office in early 1994, managed by an intern paid for by ALIN. The intern is also writing articles for ALIN's

publication, *Baobab*, about RARC activities. Some ALIN/OXFAM partners in the field in Senegal will be trained by the RARC team in certain regenerative technologies. An exchange of mailing lists has occurred, and some joint proposals to obtain financing will be considered.

The RARC initiated their involvement in an African Development Foundation agroforestry project in the community of Sambe. The RARC role is in technical training and monitoring & evaluation.

Project Director Amadou Diop participated in and presented a paper at a conference in Quebec City, Canada, on monitoring and evaluating the impact of development in Africa.

Senegal's Rural Radio Program went to Ndiamsil to interview collaborating farmers there. The interviews were aired nationally for three days.

Volume 7, Nos. 1, 2, and 3 of *Entre-Nous* have been printed and distributed thus far in 1994.

Guatemala RARC (Centro Maya)

Major categories of expected project outcomes and their impacts, using illustrative examples:

Applied research & demonstration

Nearly 700 farmer-managed trials (*parcelas de prueba*) in 48 communities are now being monitored. Each community selects an agricultural representative to assist in monitoring and evaluating velvet bean, new maize varieties, and seed selection techniques. Farmer demand for velvet bean seed (*Mucuna pruriens*), known regionally as *frijol abono*, is considerable, exceeding Centro Maya's ability to provide enough seed for the on-farm experimentation. The seed is reimbursed by the farmers after the harvest. All participating farmers are members of Local Experimentation and Extension Committees.

A very important achievement during the first quarter of 1994 was the approval of the Forest Management Plan for the Bethel Forestry Cooperative by CONAP (National Office for the Protection of Natural Areas). The plan was developed in collaboration with *Mayarema* partner Conservation International (*Mayarema* is a USAID-Guatemala mission-funded project) and implemented with the assistance of Centro Maya. The plan includes the first legal logging concession granted to cooperatives based on a forest management plan in Guatemalan history. A private firm was sub-contracted by the cooperative to do the actual logging (selective cut). Twelve community members have participated as supervisors and laborers. The forestry plan was integrated with livestock and agriculture activities in mid-1994.

A total of thirty different species of native (Mayan) plants were planted at the CIREM, the Center for Research on the Reconstruction of Mayan Ecosystems.

The Centro Maya team has conducted 145 interviews among single farmers and rural families in 55 communities for baseline data. In June, 1994, the team extended the *sondeo* process to the La Pascion and Usumacinta rivers area, where three cooperatives were studied.

Centro Maya received 45 species of grass and legume species from Dr. Pedro Argel at CIAT in Costa Rica. The species will be evaluated at three ecologically distinct sites in the Peten.

Training & education

More than 50 field days and workshops about the use of velvet bean have been held in two years, and have been attended by 688 farmers and technicians (37 women). Data on the number of farmers who have integrated velvet bean into their cropping systems are inconclusive to date. For

this reason, a study focusing on the acceptability of innovative technology is being conducted at Centro Maya. The methodology was designed by Centro Maya's monitoring and evaluation coordinator, Juan Manuel Herrera. The first technology studied is intercropping corn with velvet bean, and the second is selection of corn seed.

Several interns joined Centro Maya in 1994, including two in archaeology, two in tourism, two in crops-livestock. All are from CUDEP (a regional campus of San Carlos University). Three other students are conducting thesis work with Centro Maya in livestock, bean, and chicle production.

An intern from Denison College in Ohio, Chris Timura, spent four weeks at Centro Maya working with staff members while studying farming systems and social organization.

Technical Director (Rodale employee) Sergio Ruano made his third presentation to the EcoEscuela language and environmental education school managed by ProPetén (Conservation International). The presentation focused on the use and management of velvet bean. Fourteen students from the U.S., Holland, Germany, Canada, and Austria attended.

Technical Director Sergio Ruano, Kitchen Gardens Specialist Vilma Cue, and Extension Specialist Antonio Pineda, attended an appropriate technology workshop on organic farming technologies. The Centro Maya team presented information on seed selection and the use of *frijol abono*.

Sergio Ruano and Sustainable Agriculture Program Coordinator, Salvador Bolaños led a two-day workshop on farming systems research and extension. The workshop was focused on on-farm activities, farmers' participation, the design of technology, and validation and extension activities and techniques. A total of 41 people attended the workshop.

Communications & networking

During the first quarter of 1994, the Centro Maya team reviewed and visited the on-farm and on-station research and extension work begun last year. In workshops held in the communities collaborating with Centro Maya, work plans were drafted. Every project in each community was discussed and approved or disapproved by the team, following visits with community members. The work plan was submitted to the Centro Maya technical council, the project board of directors, USAID, and the communities for their review. It is this type of participation at all levels that is integral to the success of the Centro Maya project.

ICTA, the Guatemalan agronomic research institute, is providing three soil science professionals to Centro Maya in order to defray laboratory soil analyses costs.

The *Dirección General de Desarrollo Agrícola* (DIGESA), the official agricultural extension agency, assigned four extension agents to forty demonstration plots (10 plots per agent) in 1994. The use of CARE's extension personnel to promote velvet bean was initiated in 1994 as well.

A radio program, called *Platicando con el Agricultor* (Chatting with the Farmer), is broadcast every Saturday at noon for 45 minutes (with an estimated listening audience of approximately 50,000 people). The broadcast is focused on the elements of the Centro Maya work plan.

Guatemalan ministry of agriculture officials have verbally articulated their wish to Centro Maya Technical Director Sergio Ruano and Rodale Institute International Program Director, Jonathon Landeck, to use Centro Maya as a model for agricultural development throughout Guatemala.

The municipal council of the community of Santa Ana wants to link the use of velvet bean (*frijol abono*) with concessions of municipal land for farming, with technical assistance provided by Centro Maya.

The Foundation for the Development of Mayan Ecosystems (the *Fundacion*), the NGO with whom RI collaborates on the Centro Maya project was granted legal status in April, 1994. This means that many (but not all) of the funds obtained to support Centro Maya will be administered by the Fundacion. Four (out of seven) members of the Fundacion visited RI in August, 1994.

Rodale Institute Headquarters

During 1994 to date, the *Women in Agriculture* issue (V.6,2), the *Agroforestry* issue (V.6,3), the *Animal Husbandry* issue (V.6,4), the *Extension Methodologies* issue (V.6,5) and the *Rice* issue (V.6,6) of the International Ag-Sieve were mailed. The Extension issue was published electronically (via INFORUM) prior to printing in order to elicit feedback from readers that can be placed in the same Ag-Sieve issue as the stories (rather than in a subsequent issue).

The Nitrogen Fixing Tree Association (NifTA) labels were used with the *Agroforestry* issue mailing. Tillers International of Kalamazoo, MI sent us their mailing list to use for the *Animal Husbandry* issue (600+ names), and we received the mailing list of an organization based in Massachusetts, called OUTREACH, as part of a swap agreement. OUTREACH is similar to the Developing Countries Farm Radio Network, but they provide printed educational materials to the developing world. The list contains about 500 labels, many of which are United Nations Environment Program (UNEP) and other high probability organizations.

- d) Benchmarks of project progress (no refinements, changes, and additions from that originally presented in the PVO proposal):
- * The integration of livestock into cropping systems, with forage feed bank and compost production elements, remains the most important component of the Senegal RARC project activities. At Centro Maya, community-based land use planning that integrates research, education, and communication activities on crop production, livestock husbandry, and forest management has become the most important program element.
 - * Accounting and record procedures documented and provided to staff (accomplished);
 - * More effective use of computer conferencing (Both RARCs are linked to headquarters via an electronic networking system based at Rodale Institute called INFORUM);
 - * More RARC information in the *International Ag-Sieve* (incomplete);
 - * Baseline survey/evaluation (complete in Guatemala, incomplete in Senegal);
 - * At least three staff members per RARC will have received training to strengthen internal M&E, reporting, accounting, and information delivery systems (completed in Senegal, in process at Centro Maya).
 - * *Entre Nous* circulation increase from 300 to 1000 (holding steady at about 530);
 - * At least six press releases per year on regenerative agriculture technologies to major Senegalese media (behind schedule);
 - * Three annual training workshops for Peace Corps and other NGOs (well ahead of schedule);
 - * Four to five Peace Corps volunteers working on agriculture projects (on schedule);
 - * Training materials produced (behind schedule for Year 2);

- * Agreements with host governments (achieved);
- * Organizational and financial sustainability plans designed and agreements reached among collaborating institutions (achieved and being implemented for both RARCs);
- * Monitoring and evaluation handbook in design stage (on schedule).

e) monitoring plan:

No refinements, changes, and additions from that originally proposed except as noted above. M&E data at each RARC has been collected, focusing on impact indicators, but there has been little staff time available to analyze the data.

f) evaluation plan:

Community level evaluations of technology occur during the period November-February at both RARCs, and project level evaluation is scheduled for January, 1995 at each RARC.

2. Mid term assessment:

An assessment of the PVO Matching Grant was originally scheduled for February, 1994 at the Senegal RARC, and for April, 1994 in Guatemala. Candidates for the external evaluators were forwarded to the Matching Grant project officer (now retired) in the third quarter of 1993. In the first quarter of 1994, RI was advised by the project officer (now retired) to develop a Scope of Work for the evaluation to occur in late 1994. The external evaluation of the Matching Grant, should be conducted in January, 1995.

IV. Review and Analysis of Project Results by Country

1 & 2. a) Specific outputs achieved (Year 2):

Senegal (projected outputs and status):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in use);

No significant variance between what was proposed and what was accomplished. According to the Senegal RARC's M&E methodology, community members study and measure themselves. This methodological approach is being tested in four communities, where baseline and formative information is collected to assess project impact by activity for both men and women. The communities are Tatene Toucouleur, Keur Banda, Ndiamsil, and Koulouck. A logical framework provides the variables that correspond with the impact indicators selected for each project activity. These are organized into a one-page matrix that serves as a reminder of the specific, quantifiable information that needs to be obtained to assess impact. An additional set of broader, open-ended questions designed to solicit farmer perceptions is also used. Data files to manage the information have been set up on the RARC's computers using Filemaker Pro software.

No problems in meeting the final project objectives are anticipated with respect to establishing a monitoring and evaluation system at the RARC. Implementing the M&E system in a regular and efficient manner has been more problematic. Two visits by the M&E consultant and two by the RARC Coordinator were made during the current reporting period. During these visits, it is clear that the RARC team knows how the M&E system is intended to work. However, the staff is often so involved in its research, training, and communication activities that little time has been given to

analyze the M&E data already collected. In short, the RARC team is often overextended due to the heavy demand on the part of farming communities for training in compost, livestock fattening, gardening, and the use of leguminous plants in cropping systems. Resources to support these activities are in short supply so, in this face of having to make a choice between meeting community demands or providing training, the data analysis is delayed.

- * Accounting and reporting systems developed (in development);

Rodale Institute's Financial Officer visited the RARC project in February, 1994 for one week to work with the RARC Accounting Secretary. Several modifications were made in the Senegal budget line items in order to be more specific about expenditures and to conform more closely with the budget items specified in the Matching Grant document. In addition, more attention has been given to assigning project income to its correct source. These minor modifications have been implemented. Overall, RI is very pleased with accounting and reporting.

The critical issues to address remain the same as for the last reporting period: 1) limited access to computers for record-keeping on the part of all RARC staff; and 2) limited funds for professional in-service training. Four computers are now available for use at the Senegal RARC, but these are shared among nine staff members. The Accounting Secretary should have one at his desk. The initial account reporting is conducted by hand, which serves to slow progress, and then inputted into the computer accounting program (Quicken) by the project director. The positive aspect of this system is that accountability has been scrupulously above board. No errors or irregularities have occurred to date (after seven years of RARC activity), and no problems in meeting the project objectives are anticipated.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (completed).

No variance between what was proposed for the reporting period and what was achieved. No problems are anticipated in meeting the final project objectives.

- * More widely distributed publications; increased circulation of *Entre Nous*, six media releases each year (partially completed).

During the reporting period, the circulation of *Entre Nous* remained steady at about 535 (which translates to roughly 1338 readers). The goal for 1994 was to increase circulation to 700, but it appears that subscription numbers have reached a plateau. Suggestions by RI headquarters staff regarding modifications in *Entre Nous* have been met with agreement in principle, with little or no follow-up in-country. The quality of the bulletin has definitely improved. However, financial resources from foundations to complement those provided by the PVO Matching Grant are in short supply. The RARC Communications Specialist, Pape Kane Diallo, has had difficulty publishing media releases in *Le Soleil*, Senegal's largest daily newspaper, due to the latter's news priorities.

- * Training materials for Peace Corps and other NGOs; two brochures/posters produced (completed).

No variance between what was proposed for the reporting period and what was achieved. No problems are anticipated in meeting the final project objectives. A slide set for use in training farmers and technicians in composting, in Wolof and French, was developed during the reporting period and is now available for use by NGOs and the Peace Corps. To complement the slide set, a brochure and a poster in Wolof and Arabic about composting were developed (enclosed).

- * Trained Peace Corps volunteers; series of three annual workshops (completed).

No variance between what was proposed for the reporting period and what was achieved. No problems are anticipated in meeting the final project objectives. These workshops were led by the RARC Team Leader. About 80 prospective Peace Corps volunteers to be posted in Senegal and elsewhere in West Africa received training on soil-improving legumes in cropping systems.

Guatemala (projected outputs and status):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

The Guatemala RARC, Centro Maya, is using the same M&E methodology as used at the Senegal RARC. This will make it easier to produce the M&E handbook to be developed with support from the PVO Matching Grant, a principle objective for 1995. At Centro Maya, there is no significant variance between what was proposed and what was accomplished. Development of the system is on schedule and no problems are anticipated in meeting the final project objectives.

At Centro Maya, a baseline survey of collaborating institutions was conducted in mid-1993 using the *sondeo* method, a descriptive survey of socio-agro-economic conditions, directed by the M&E Coordinator, Juan Manuel Herrera, and the Technical Director, Dr. Sergio Ruano, both of whom are employed by RI. *Sondeos* are conducted in every community prior to initiation of activities there. These surveys serve as baseline data collection tools.

No problems in meeting the final project objectives are anticipated.

- * Accounting and reporting systems developed (in development);

Rodale Institute's Financial Officer did not visit the Centro Maya project during this reporting period. Technical Director Sergio Ruano visited RI headquarters in October, 1993, and June, 1994, to clarify budget reporting issues. Modifications in the reporting system, in order to conform with Matching Grant requirements, were implemented.

There is no variance between what was proposed for the reporting period and what was achieved. There have been no errors or irregularities in reporting to date. No problems are anticipated in meeting the final project objectives.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (completed);

There is no variance between what was proposed for the reporting period and what was achieved. The Centro Maya staff is composed of highly qualified professionals and, for this reason among others, no problems are anticipated in meeting the final project objectives on time.

- * Series of three workshops developed (initial strategies formulated).

There is no variance between what was proposed for the reporting period and what was achieved. No problems are anticipated in meeting the final project objectives.

b) Effect on target groups disaggregated by gender (Year 2):

Senegal (effect on men and women farmers):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

Both men and women farmers participate in the evaluation of project activities, although their activities tend to be different. Men focus on livestock fattening, feed gardens, integrating cowpeas into millet production, and compost production for millet/sorghum. Women focus on gardening, compost production for gardens, and biological pesticides for gardens.

- * Initial baseline survey and evaluation completed (not completed);

The effect of project results on the target groups (men and women farmers) in relation baseline data collection is that community members would understand why baseline data must be gathered, why evaluation must occur, and how the evaluation is linked to the baseline data. These perceptions are not measured, but considerable time has been allocated by the Senegal RARC staff to communicate to community members, men and women, what the RARC mission is, and why we are attempting to monitor the impact of project activities on peoples' lives. It is not clear that a baseline survey *per se* will be completed due to the cost of collecting these data. The RARC staff is using interviews with collaborating farmers to determine how their perceptions and practices have changed as a result of interacting with the RARC project.

- * Accounting and reporting systems developed (in development);

If the RARC's accounting and reporting system fell into disarray, which it has not, this could have an effect on operating funds. In fact, one of the very strong points of the Senegal RARC is that, over a seven-year period, more than \$1 million has been transferred from Rodale Institute to the Senegal RARC with no incidents of unaccounted funds. The PVO Matching Grant has served to strengthen that capacity even more, such that the RARC is entirely capable of managing funds that it obtains in Senegal, and is well-positioned in terms of financial management to become its own Senegalese NGO.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (completed).

This output has considerable effect on the target groups (men and women farmers), particularly with regard to the trained staff in M&E methodology. The cost of trying to conduct M&E with an untrained staff would be significant, and women would likely feel that cost most acutely. This is because women generally receive fewer benefits from development action, and an ineffective M&E system resulting from an untrained staff would fail to point this out in objective terms. Just the same, the RARC staff is in daily contact with women and men farmers. Women's participation in the RARC's activities has increased annually (up to 32% in 1993), which reflects the consciousness by RARC staff members to address women farmers' needs.

- * More widely distributed publications; increased circulation of *Entre Nous*, six media releases each year (partially completed).

The potential effect on the project's target groups is significant assuming that the publications are readable by a literate audience. Some materials have been published in national languages, which has a greater potential impact on communities than publication in French (given that most rural residents neither speak nor read French). The circulation list for *Entre Nous* was not disaggregated

by gender as expected. That information is available. Funds were solicited for incorporating a feature section about women farmers into *Entre Nous*, but not obtained.

- * Training materials for Peace Corps and NGOs; two brochures/posters produced (completed).

Training has become a major vehicle for attracting operational funds as the RARC project moves toward autonomy from Rodale Institute. Training materials are in great demand, but require even more budgetary resources. The slide set on composting was not presented at the 1993 Farmers Conference because of an equipment problem. It will be presented at this year's conference. If the production of training materials were funded at a greater level, both men and women Peace Corps volunteers would be able to make great use of these.

- * Trained Peace Corps volunteers; series of three annual workshops (completed).

Many Peace Corps volunteers are women, and pre-disposed to working with women. Thus, the effect of these workshops on the target groups, disaggregated by gender, is significant.

Guatemala (effect on men and women farmers):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

As in Senegal, project beneficiaries are aware that Centro Maya is interested in monitoring and evaluating the impact of its activities on people in communities where impact indicators have been identified. This effect has not been disaggregated by gender, but the nature of the work at Centro Maya addresses men's agricultural activities much more than women. The completed baseline study (*sondeo*) has not been analyzed and disaggregated by gender. As noted in last year's report, women in the Peten region of Guatemala, where Centro Maya operates, do not generally cultivate field crops (maize and beans). Some do have homegardens, and Centro Maya has therefore begun to direct some resources and staff members to address their needs. Homegardens are one of the more sustainable forms of food production in the Peten, and clearly more effort should be directed to that production system.

- * Accounting and reporting systems developed (in development);

This output has little measurable effect on the target groups, assuming no lapse or collapse of Centro Maya's accounting and reporting systems, which has not and is not expected to occur.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (training in process);

This output has considerable effect on men and women farmers. The odds favor men farmers receiving more attention from the Centro Maya staff. Considerable progress was made in late 1993 and early 1994 in adding women staff members to Centro Maya (three were added, up from zero). These staff changes will have a positive effect on women's involvement in project activities in the longer term, as long as the women remain members of the Centro Maya staff.

- * Series of three workshops developed (initial strategies formulated).

Workshop participants and number of women attending were reported above. That 37 out of 688 participants (5.3%) were women is not satisfactory, but it presents opportunities for improvement.

c) Problems encountered and how they have been addressed (Year 1):

Senegal (problems encountered):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

The M&E system is very easy to use, following a number of iterations and considerable staff input into the design of the system. However, staff time to analyze results is in short supply. Despite the fact that RARC staff are aware that a good M&E system is an asset to project sustainability, M&E often takes a back seat to actual project activities, particularly training, which is in great demand. Nevertheless, the RARC staff are leaders among other NGOs in Senegal by promoting the value and use of M&E at meetings and such. In fact, there is RARC capability to provide training in M&E to other NGOs. Unfortunately, the individual originally trained as the M&E Coordinator worked for one year in that position and then became ill and unable to perform his duties as required. Rather than hire and retrain another individual, the project director assumed responsibility for M&E and, because the system is designed to be a team effort, individual team members continued to collect the data.

- * Initial baseline survey and evaluation completed (not completed);

The RARC staff has not been able to manage the baseline survey well, although the M&E system in place still serves to evaluate impact. Some information related to the impact of project activities on such household parameters as income, nutritional level, and wealth is not available, because these data have no baseline. The impact that the RARC is able to measure is the number of farmers now using various techniques promoted by the project who didn't use them before. The RARC staff is now working with the USAID-support project called DESFIL (Development Strategies for Fragile Lands) to determine why some farmers are adopting these technologies, beginning with compost and animal fattening, and why others are not. This is definitely a more practical and cost-effective approach to M&E. The key issue, our M&E consultant continues to point out, is what information farmers and staff members believe to be important, given resource constraints. That some farmers adopt technologies and others do not indicate: 1) the technologies do have value for some farmers; and 2) constraints exist to the adoption of these technologies. In working with the DESFIL project on M&E, using an analytical framework, these questions are being addressed.

- * Accounting and reporting systems developed (in development);

No problems encountered here.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (completed).

There are no problems on the part of the RARC staff in understanding these systems. The only difficulty has been finding adequate time to implement them, given the heavy demand for RARC staff technical expertise. Monthly reporting has been regular and thorough. The M&E contact sheets developed for using the M&E system have facilitated report writing.

- * More widely distributed publications; increased circulation of *Entre Nous*, six media releases each year (partially completed).

Two staffing deficits in the RARC Communications Program have remained due to prolongations of studies by Voré Seck (in the U.S.) and Ansou Sané (in Geneva). Ansou has just returned, and Voré will return in October, 1994. These staffing deficits, and the inability to hire temporary replacements due to resource constraints have limited the RARC's ability to expand the regular

publication production. *Entre Nous* appears to have leveled out at just above 500 subscribers (1250 readers).

- * Training materials for Peace Corps and other NGOs (incomplete); two brochures/posters produced (completed).

No significant problems encountered, except that the training materials have not been produced due to insufficient staff, as noted just above. The compost posters/brochures have been completed.

- * Trained Peace Corps volunteers; series of three annual workshops (completed).

No problems encountered. Cooperation between the Senegal RARC and Peace Corps is excellent.

Guatemala (problems encountered):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

No significant problems have been encountered to date. There are fewer logistical problems at Centro Maya, as compared to the Senegal RARC, thanks to available resources. Centro Maya is well-equipped with vehicles, and some communities have access to telephones, which greatly facilitates travel plans for visiting and setting up workshops. The M&E Coordinator at Centro Maya, Juan Manuel Herrera, has considerable experience with M&E, and is very familiar with the Logical Framework approach to program design and evaluation.

- * Accounting and reporting systems developed (in development);

No significant problems were encountered. The accounting and reporting systems have continued to improve as the project develops.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (training in process);

No significant problems encountered. The Centro Maya staff is extremely professional.

- * Series of three workshops developed (initial strategies formulated).

No programmatic problems have been encountered. The Centro Maya M&E Coordinator meets on a regular basis with program staff to discuss how project activities are addressing project impacts. One issue is that Centro Maya has been, to date, primarily a research project, which means that impacts may not be significant for at least three years (Centro Maya is now in its third full year). Centro Maya is well-positioned to instruct the other Mayarema partners in the use of the M&E system based on a logical framework approach.

- d) Impact on local institutions, local policy, and people (disaggregated by gender) outside the project (Year 2):

Senegal (impact on local institutions, etc.):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

There is interest in the RARC's M&E system on the part of other collaborating NGOs in Senegal who comprise the national and regional NGO consortia (CONGAD and Cellule Inter-ONG), as

well as by the USAID-supported NRDAR (Natural Resource Based Agricultural Research) project to support Senegal's Agricultural Research Institute (ISRA). The NRBAR project has begun to act on this interest by instituting a similar M&E system.

- * Initial baseline survey and evaluation completed (not completed);

There has been no baseline survey and evaluation completed, so the impact on local institutions in this respect is not apparent.

- * Accounting and reporting systems developed (in development);

No apparent impact on local institutions to date.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (completed).

Likewise, no apparent impact on local institutions to date.

Guatemala (impact on local institutions, etc.):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

Centro Maya is well ahead of the other organizations operating in the Peten with regard to having and implementing an M&E system based on a logical framework approach, especially in relation to the other Mayarema partners (CARE, Conservation International, The Nature Conservancy). We know this because, at Mayarema meetings to discuss M&E, Centro Maya is the only project with an kind of M&E system at all. As USAID-Guatemala is now expecting these partners to develop their own M&E systems, these partners will look to Centro Maya for leadership and guidance in setting up their system. Meanwhile, the Centro Maya M&E system continues to evolve into one which uses the Natural Resources Management Analytical Framework, a variation of the logical framework, which makes it easier to identify constraints to the adoption of technology.

- * Accounting and reporting systems developed (in development);

No apparent impact on local institutions to date.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (training in process);

No apparent impact on local institutions to date.

- * Series of three workshops developed (workshops presented).

Centro Maya has been a major force among local institutions in the Peten, being the only institution working exclusively in agricultural development using regenerative technologies. The project staff offered and participated in a number of field days during the past year, as noted above, primarily related to velvet bean and farming system research.

e) Unintended effects (Year 2):

Senegal (unintended effects):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

There is positive interest shown in the M&E system by collaborating institutions and NGOs, with no unforeseen negative effects. Time management was expected to be an issue because the M&E system being implemented relies on impact monitoring overseen by each staff member.

- * Initial baseline survey and evaluation completed (not completed);

No unintended effects.

- * Accounting and reporting systems developed (in development);

No unintended effects.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (completed).

No unintended effects.

- * More widely distributed publications; increased circulation of *Entre Nous*, six media releases each year (partially completed).

No unintended effects.

- * Training materials for Peace Corps and other NGOs; two brochures/posters produced.

No unintended effects.

- * Trained Peace Corps volunteers; series of three annual workshops.

No unintended effects.

Guatemala (unintended effects):

- * Monitoring and evaluation (M&E) methodology and system developed (methodology developed, system in development);

No unintended effects.

- * Accounting and reporting systems developed (in development);

No unintended effects.

- * Trained staff in M&E methodologies, report preparation, accounting and information systems (training completed, reporting in process);

No unintended effects.

* Series of three workshops developed (initial plans developed, one presented).

No unintended effects.

Additional Comments About Results and Impacts

Senegal/Guatemala:

The Rodale Senegal RARC project continues to pursue its long-term goal: To build institutional and community capacity to manage and use local human and natural resources to increase people's well-being. Achieving this goal requires improvements in the physical, chemical and biological qualities of soils on farms in Senegal, in the health and nutrition of farm community members, and in household income earning opportunities.

The project has had impact on individuals and institutions by responding to four objectives:

- 1) Gather and disseminate information through organization networks, site visits, field days, and village-level participatory evaluations.
- 2) Enhance the capacity of local farmer's groups to participate in the design and evaluation of regenerative agriculture technologies.
- 3) Train trainers by focusing on farmers as communicators of technical information and teachers of other farmers.
- 4) Promote the multiplication of technologies that are appropriate to regenerative agriculture through publications and visual training aids.

In 1992, a total of 105 farmers followed a first, second or third year of technology evaluation in their villages. In 1993, another 241 individuals (165 men plus 76 women) took part in on-farm technology evaluation activities. These technology evaluation activities are continuing in 1994, with increasing numbers of farmers participating directly in training and research.

At Centro Maya, whose budget and staff size is four times that of Senegal, approximately 1,200 farmers have been directly engaged in on-farm trials in a three-year period. Using a conservative multiplier of five (5), approximately 6,000 farmers are now aware of these trials. To date, nearly 800 farmers and technicians have attended Centro Maya sponsored activities. Another 4,000 individuals have information about regenerative agricultural alternatives in the Peten.

Centro Maya is now prepared to undertake a more integrated, community-focused approach to research and education, while working with communities to develop and implement land use management plans. This is expected to accelerate positive impact and create greater opportunities for project activities to help community members generate income and enhance the productivity of their local resources.

The Centro Maya staff has been developing working relationships with both government and non-government organizations. In the future, more focus will be given to farmer and community organizations, such as cooperatives, because the existence and collaboration of such groups will be essential to the development of community-based land use management plans.

In the near future, more attention will be given in the near future to expanding Centro Maya's communications efforts as information exchange tools, with continued use of the radio and more use of printed materials.

In conclusion, the Centro Maya project has realized a significant level of achievement. A strong institutional foundation has been established to address and fulfill all of Centro Maya's current goals, as well as new ones defined in the development and implementation of community-based land use management plans during the latter part of 1994 through 1996.

VI. Financial Report

1. Project Financial Overview (Attachment 1)

PVO Organizational Financial Overview (Attachment 2)

2. Proposed budget compared to actual expenditures:

Rodale Institute experienced only minor expenditure variances during the second fiscal year for the use of USAID financial support. The significant Senegal and headquarters PVO expenditure variance is due to an overestimate of the matching contribution of Rodale Institute in the original budget. The Institute has matched USAID expenditures at a 2.2 to 1.0 ratio (Rodale/USAID), but the budgeted ratio was 2.8 to 1.0 (Rodale/USAID).

Currently, Rodale Institute has matched 2.2 dollars of match for every dollar of USAID support. The Institute expects to maintain a significant level of matching funds contribution (2 : 1), that is, two dollars of Rodale match to one dollar of USAID support. However, we would like to request an amendment to the original contractual match agreement (2.8 : 1). The current variance is due in part to a lack of awareness advertisements about the Senegal RARC and Centro Maya in Rodale Press publications during 1994. Another reason is the decreased support for the Senegal RARC on the part of the private foundations that supported the project over a three and four-year period. More awareness ads are expected in 1995. Additional foundation and private sector support is currently being solicited. Otherwise, there have been no changes in the proposed budget line items for the remaining project years.

3. Status, usual timing, and rate of letter-of credit drawdowns:

Rodale Institute requests letter-of-credit drawdowns based on immediate disbursement requirements and disburses funds as soon as possible. Rodale Institute usually requests an average of six (6) draws a quarter for a total of about \$105,000. This timing and rate has been relatively stable. There are no anticipated changes in the rate of drawdown or cost overruns.

4. Fund-raising plans:

For 1994-95, the Senegal RARC expects to complement the Matching Grant support from USAID with direct support from AID's Senegal Mission funding (another strengthening grant as well as private donations). A response to that request is expected in January, 1995. The recent devaluation of the West African CFA has reduced the size of the budget required to operate the Senegal RARC by about 35%. One-half of the operating funds for the Senegal RARC will come from private sources, and one-half will be raised from multilateral organizations operating within Senegal in the form of training contracts. The same Centro Maya funding sources as 1994 are intact for 1995. Private sector enterprise partnerships for both RARCs are being explored.

5. Discussion of PVO cost-share:

Rodale Institute agreed to include indirect costs as a portion of their cost-share. A fixed rate of 85% was established for FY 1992 and 1993 and used in the calculation of total cost-share. When the actual costs of FY 1992 became known, it was determined that its actual rate for that year was

45%. The indirect cost rate in FY 1994 was 44%. The computation for FY 1995 fixed rate and carry-forward amount is attached as Attachment 3.

VII. Lessons Learned and Long-Term Project Implications

1. Estimates of project costs and benefits:

Estimated benefits are on schedule. Generally speaking, this was a well-conceived budget with some exceptions, as noted below. Lessons learned, but unforeseen one year ago, are as follows:

Senegal

- * Some of the travel budget could be better used for M&E data collection and analysis, for personnel needs as well as direct operational costs.
- * Some of the newsletter (*Entre Nous*) operations budget could be better applied to personnel to develop technical sheets, rather than other direct costs.
- * Some additional funds could have been budgeted for consultant time in Senegal because an additional follow-up visit, or additional time per year, would have helped to ensure that the RARC staff prioritize their M&E activities. Alternatively, a consultant based in Dakar, American or otherwise, would have facilitated such follow-up work.

Guatemala

- * As for Senegal, some of the travel budget could be better used for M&E data collection and analysis, for personnel as well as direct operational costs.
- * The additional funds expended versus budgeted for the M&E consultant (we are \$11,000 overbudget to date in that category) have nevertheless helped to ensure that M&E was prioritized at the project level, and that follow-up activity occurred.

2. Institution building assessment:

Senegal

In 1993, the RARC project shifted toward a second five-year phase (1994-99), the focus of which is the development of a legally and financially autonomous Senegalese institution. The institution will provide leadership for the widespread multiplication of regenerative methods and technologies throughout Senegal and Sub-Saharan Africa. The leadership vehicle requires training farmers and technicians in regenerative agriculture practices. Ideally, the Senegal RARC's clients (donors) and beneficiaries (farmers/technicians) will converge, such that farmers and technicians will pay for the training and information services they receive from the project.

Such a convergence requires encouraging donors to directly support farmers' associations, which will then sub-contract with the RARC (or other such NGOs) for specific trainings. Some NGOs will also request and pay for training from the RARC staff in participatory research and extension methods, M&E, and regenerative agricultural techniques. This approach is being implemented in some RARC partnerships, such as the National Council of Negro Women project and the USAID-supported Southern Zone Water Management Project. In fact, this is the objective of the proposed institutional strengthening support from the USAID-Senegal Mission (currently under review, as noted previously). According to this scenario, farmers' associations will also have a major role in management of such donor funds. Multi-lateral organizations will be a principal funding source.

The PVO Matching Grant has contributed to this institutional development by providing support during 1992-94 for activities that have attracted the interest of in-country donors and those who need training services. More than \$40,000 has been obtained in less than two years via training services. The RARC is on schedule to be 80% financially independent (from Rodale) by 1999.

The legal transformation of the Senegal RARC into a Senegalese NGO is expected occur in early 1995, one year ahead of schedule. A Board of Directors will be selected, composed of a cross-section of Senegal's agricultural and business community. Its function will be to set and enforce RARC policy, hire RARC staff, and lead the search for operational support. Rodale Institute will maintain a partnership with the RARC and support it with funds managed by Rodale Institute at around \$50,000 per year through 1999, assuming an annual operating budget of \$250,000. The current RARC budget is approximately \$160,000.

Guatemala

Centro Maya will use two strategic vehicles to raise financial support for its activities in the future: 1) Development of a Guatemalan institution, the "Foundation for the Development of Mayan Ecosystems," which will work to obtain operating funds for Centro Maya; and 2) The International Program office of Rodale Institute, working in conjunction with the Institute's Development Office and Rodale Program Associate consultants.

Centro Maya will require approximately \$600,000 on an annual basis to maintain its current level of operations. About one-half of the annual budget is currently used for personnel (33 staff). At present, virtually all financial support for Centro Maya is furnished from U.S. or Guatemalan government sources. Beginning in 1995, major non-government funding sources are expected to support the project, at a slightly lower budget level, including private individuals and foundations located in the United States. Many foundations are not able to support Centro Maya directly, so their support will be channeled through RI.

Over the next three years, four principal sources of external support will be targeted:

- * **International Donor Agencies:** USAID/Guatemala made an initial \$564,882 commitment for project startup, in addition to the centrally-funded PVO Matching Grant. Rodale Institute will request additional USAID support for specific purposes, such as land use management planning and continued development of M&E. Financial support from European Economic Community members and the Inter American Development Bank will also be pursued, among others. Support (\$300,000) has already been received for 1995 from the Canadian organization ACNUR/CECI for the extension of Centro Maya activities out to several of the cooperatives along the Rio Usimacinta (which borders Mexico), where some returning Guatemalan refugees are being relocated.
- * **The Guatemalan Government (GOG):** Potential support is available from the Ministry of Agriculture (MAGA), which has tentatively committed \$1,000,000 to support Centro Maya, and various other parastatal bodies. This money will be used as direct support for specific staff members and project activities.
- * **Private Foundations:** Private foundations based in the U.S., Europe, and elsewhere are interested in alternatives to deforestation of the Maya Biosphere Reserve (which is a primary objective of Centro Maya) by . Rodale Institute has initiated discussions about funding Centro Maya with a number of foundations and has submitted proposals to these in 1994.
- * **Individual Donors in the U.S. and Guatemala:** These donors can be separated into two groups; a broad range of individual donors responding to targeted mailings or other media, and a smaller number of individual major donors who contribute significant amounts in response to individual personal solicitations. The Institute has also started to cultivate the interest of several major

donors. These people are personally contacted by mail and/or telephone on a regular basis and provided with updates about the progress of the project.

Other potential support for Centro Maya is derived from corporate support, principally Guatemalan institutions, organizations, and companies. Several economic sectors in Guatemala have a stake in the development of alternatives to deforestation in the Peten. The vibrancy of the tourist sector, for example, including airlines, hotels, restaurants, and tour operators, is predicated on the notion that a significant forest would remain intact in the Peten. Many Guatemalan companies are increasingly interested in maintaining a productive economy to promote a stable social order. The sustainable use of natural resources is critical to that economic future. Fundación board members, working with a funding development specialist, are key to cultivating the support of these private interests.

3. Estimate of sustainability:

Sustainability is a multidimensional concept. Ideally, for Rodale Institute's RARC projects, sustainability requires that clients and beneficiaries (farmers and technicians) be one and the same, paying for the training and information services they received through the project. As long as the clients/beneficiaries pay for these services and/or products, proof exists that the service or product (information) is valued and in demand.

Current clients are for the most part donor organizations that pay for services either directly or indirectly, rendering most but not benefits to farmers and technicians. Rodale Institute obtains the majority of these funds. While the effort to develop and strengthen the capacity of each RARC to obtain their own funds from such donors is certainly correct, this approach does not represent true sustainability, but rather another form of dependence.

Thus, Rodale Institute's long-term strategy is to maintain the RARC's underlying principles -- participatory methods; the integration of applied research and demonstration, education and training, and networking and communications activities; better use of local human and natural resources; national staffing; and community-based decision-making -- while developing a tangible product, beginning in late 1995.

Developing this product will require private sector investment in Senegal, Guatemala, and wherever a RARC is established, for example, Russia. Marketing revenue would, in turn, help support the project and ensure sustainability. In addition to training and information services, the RARCs might offer an organic food products certification enterprise. Or the RARC might interest private investors in the establishment of metro-based small-scale organic tomato production. Or, as in Guatemala, a tourism component (ancient Mayan farming) may bring in revenue.

Initiating RARC development where some level of organization already exists is another aspect of RARC project sustainability. The fledgling RARC in Russia is such an example. Rodale Institute is building the institutional capacity of an existing Russian NGO, the Federation for Agrarian Development Research (FADR). A similar strategy would be in order in Haiti, where development of a fourth RARC is being evaluated.

The sustainability of the Senegal and Guatemalan RARCs is favorable, due to the tremendous accomplishments at the community level, and the visibility garnered at the government and donor levels. While Rodale Institute can claim success today, the task of making each RARC more sustainable remains. Rodale anticipates being directly involved in Senegal for an additional three years, and an additional four years in Guatemala.

4. Benefit distribution (disaggregated by gender):

Greater involvement of women in the Senegal and Guatemala RARC activities will require more affirmative efforts, but definite progress has been made. Beginning in 1995, Rodale Institute will make women farmers and urban gardeners the central focus of its strategic plan. At the Senegal and Guatemalan RARCs, this strategy will not be immediately recognizable due to the work that is ongoing in communities where men are the primary beneficiaries. However, women are generally the most important link in the food production system given their potential to make life better for families and communities. Despite the fact that women are the most vital component of food production, processing, and distribution, they are supported the least by development funds. When women do well, their children and husbands fare better too, which is not always true when men are the primary beneficiaries. So, in order to have the greatest and most efficient impact on household revenue and nutrition, the RARCs will target women as direct beneficiaries first and foremost, if not exclusively. This programmatic transition will begin in 1995.

5. Local participation (disaggregated by gender):

At the Senegal RARC, consistent improvements in women's participation as beneficiaries and as staff members have been made. In Guatemala, positive efforts have also been made over the past year. This momentum will be leveraged to focus upon women, first as clients, whether or not the staff attains a 50-50 men to women ratio right away. RARC project activities will focus increasingly upon vegetable gardening, small ruminant fattening (using their manure for compost production), the use of edible beans (i.e. soil-improving leguminous plants) in vegetable and grain cropping systems, and the marketing of organic food and fiber products in metropolitan areas. New RARCs will be founded upon this orientation. Existing RARCs, including Russia, will require a more gradual transition. Partnerships with the RARCs will be oriented toward those organizations which are able to develop women's management skills, including numeracy and literacy, while the RARCs provide technical training.

6. Leadership development (disaggregated by gender):

Rodale Institute defines leadership as the ability to bring people and disparate groups together for a common, workable purpose. In terms of gender, focusing on women clients more affirmatively will bring them into the participatory development process more effectively, though not at the exclusion of men. Our goal is to avoid struggles to rationalize lower participation rates by women. Moreover, Rodale Institute actively promotes collaboration as a priority. The Senegal RARC has worked directly at the community level with more than 30 NGOs and PVOs in the past seven years, not including government institutions. Two staff members are seconded to the RARC from government institutions. Centro Maya's working relationship with government and quasi-government institutions is very strong. Its partnerships with NGOs is not as pronounced, including the other Mayarema partners, but growing.

7. Innovation and technology transfer:

The adoption of innovative technologies requires, above all, time. Some constraints to adoption are similar, but the people involved are different. It is a false that there is a "typical" Senegalese or Guatemalan farmer. In fact, no two are nearly alike. Thus, both RARCs are beginning to use USAID's (Africa Bureau) Natural Resource Management Analytical Framework for developing annual workplans and evaluation the adoption of promoted technologies. The projects have a better chance of alleviating constraints because technologies alone will not solve problems. Where labor constrains the use of the technology, the technology requires modification. If revenue from the use of an innovative technology is insufficient, use of the technology will languish. This is why the closer integration of livestock into RARC agricultural development efforts is becoming more important. Farmers can make money from livestock. However, the correct approach is to

determine how to integrate these livestock without harm to the environment because a majority of livestock management techniques are potentially destructive. In Senegal, intensive use of silage, crop residue, and cultivated forage to fatten and sell stabled livestock, and use their manure for compost production, is working. In Guatemala, the focus is on intensifying pasture productivity and use so that cattle are not left to roam and browse at will in the rainforest.

8. Policy implications:

Both RARCs promote farming without the use of synthetic pesticides and fertilizers with better use of local rather than purchased inputs. We are witnessing a gradual shift in thinking, if not at the government levels then at least among NGOs, that information-intensive, low-input farming is the way of the future. In Senegal, the term "regenerative agriculture" has been used by the RARC for seven years. Now it is not uncommon to hear others in rural development use the term. The same is true for compost production and use. Not only is compost once again popular among farmers, now that fertilizer subsidies have been eliminated, but NGOs such as Winrock International have incorporated its promotion into their activities. We expect that the same will become true in the next few years regarding soil-improving leguminous plants, small-scale livestock fattening, and organic vegetable gardening. We also expect that participatory M&E, similar to the system being developed at the Senegal RARC, will be functional in the USAID-supported NRBAR project in 1995. Further, sub-contract agreements among farmers' associations and NGOs, with greater control of funds by the community organizations themselves, will become the norm.

In Guatemala, a major policy change at the government level, regarding the "privatization" of agricultural development resources and services, will be made with reference to Centro Maya. That is, private NGOs collaborating with government and quasi-government entities carry out the functions formerly reserved for the government institutions. Community-based, integrated land use management planning, for which the Centro maya staff are currently developing expertise, will become a common approach to community development within the next several years.

9. Collaboration / networking with other agencies:

As noted above, collaboration is a major component of the RARC approach and, as such, is expected to grow in importance.

10. Replication potential of project approach and activities:

The RARCs are low-budget, community-targeted projects with very low administrative overhead and significant impact in terms of farmers trained and technologies adopted. In those terms, the project approach is replicable. The RARCs provide information only, versus capital items, and information is extremely replicable. The RARCs utilize farmers to teach other farmers, which is also a very replicable strategy, given that 60-75% of Senegalese and Guatemalans farm. The RARC staffs in-country do not include expatriates, so even country nationals who leave the projects as their careers develop have a strong chance of replicating the skills and knowledge they learned as part of the RARCs.

VIII. Recommendations

- * Follow the RARC methodology, building on its strengths: on-farm applied research, education and training, information exchange, networking, partnerships, communications, and a focus on biological processes;
- * Increase the participation of women farmers in RARC projects by focusing on them as direct beneficiaries beginning in 1995, and by continuing to staff the RARCs with women;

- * Continue to develop, use, and refine the M&E system of the RARCs by integrating the Natural Resource Management Analytical Framework into the M&E process;
- * Improve time management (at the Senegal RARC) with respect to the integration of M&E into on-going activities by using the period November, 1994 - March, 1995 exclusively for M&E;
- * Encourage RARC staff members to offer M&E training workshops to other NGOs and PVOs;
- * Realize a follow-up visit by Rodale Institute's Financial Officer and Development Officers to each RARC project in early 1995;
- * Explore the potential for private sector partnerships for both RARCs;
- * Focus on the production of training materials for Peace Corps and other NGOs/PVOs in 1995;
- * Make greater use of the radio, films and videos, and electronic networks at both RARCs in cooperation with Rodale Institute Headquarters;
- * Conduct the external assessments in January, 1995 at the Senegal RARC, and in February, 1995 at Centro Maya;
- * Work more closely with the DESFIL project to document the number of farmers who have received training in various technologies and the number of farmers who now practice these technologies on their farms;
- * Continue to promote the idea that communities ought to have a greater role in the management of project funds, and encourage them to sub-contract with NGOs for services, holding the NGOs as accountable as the communities for commitments;
- * Identify a site for the fourth RARC (in addition to Senegal, Guatemala, and Russia).

IX. Attachments

1. Project Financial Overview
2. PVO Organizational Financial Overview
3. Computation for FY 1994 fixed rate and carry-forward amount
4. Country data sheets (Form 1550-11)
5. Original logical framework
6. Senegal RARC publication samples (Project Officer's copy only)
 - a) Copy of Entre Nous
 - b) Copy of compost booklet
 - c) Copy of compost poster

Attachment 1
Project Financial Overview

RODALE INSTITUTE

Cooperative Agreement No. FAO-0158-A-00-2055-00

FINANCIAL PROFILE OF THE PROJECT

A. BUDGETED VERSUS ACTUAL EXPENDITURES

1993 - 1994

Project Elements	A. I. D.			PVO		
	Budget	Expenditures	Variance	Budget	Expenditures	Variance
SENEGAL						
Program	\$55,395	\$70,283	(\$14,888)	\$187,245	\$101,615	\$85,630
Procurement						
GUATEMALA						
Program	\$33,080	\$40,030	(\$6,950)	\$0	\$0	\$0
Procurement						
HEADQUARTERS						
Program	\$65,750	\$71,349	(\$5,599)	\$238,264	\$176,595	\$61,670
Procurement						
TOTAL DIRECT COSTS	\$154,225	\$181,662	(\$27,437)	\$425,509	\$278,210	\$147,300
INDIRECT COSTS	\$0	\$0	\$0	\$128,151	\$80,612	\$47,539
TOTAL PROJECT	\$154,225	\$181,662	(\$27,437)	\$553,660	\$358,822	\$194,839

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RODALE INSTITUTE

Cooperative Agreement No. FAO-0158-A-00-2055-00

FINANCIAL PROFILE OF THE PROJECT

A. BUDGETED VERSUS ACTUAL EXPENDITURES

SUMMARY TABLE

Project Elements	A. I. D.			PVO		
	Budget	Expenditures	Variance	Budget	Expenditures	Variance
SENEGAL						
Program	\$124,711	\$114,057	\$10,654	\$414,046	\$255,269	\$158,777
Procurement						
GUATEMALA						
Program	\$64,280	\$69,566	(\$5,286)	\$0	\$0	\$0
Procurement						
HEADQUARTERS						
Program	\$126,850	\$129,718	(\$2,868)	\$479,221	\$447,680	\$31,541
Procurement						
TOTAL DIRECT COSTS	\$315,841	\$313,341	\$2,500	\$893,267	\$702,949	\$190,318
INDIRECT COSTS	\$0	\$0	\$0	\$293,324	\$176,319	\$117,005
TOTAL PROJECT	\$315,841	\$313,341	\$2,500	\$1,186,591	\$879,268	\$307,323

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Attachment 2

PVO Organizational Financial Overview

RÓDALE INSTITUTE

Cooperative Agreement No. FAO-0158-A-00-2055-00

FINANCIAL PROFILE OF THE PROJECT

B. SOURCES OF PROJECT FUNDS FOR THE PVO

1993 - 1994

A.I.D. Matching Grant	\$181,662
Private	
Cash	\$122,760
In-Kind	\$125,659
Host and Other Governments	
Cash	
In-Kind	
Other A.I.D. Grants/Contracts*	\$345,809
Other U.S. Government	
Other	
TOTAL	\$775,890

***USAID/Guatemala**

Coop. Agreement No. 520-0000-A-00-1199-00

Amount: \$564,882

Funding Period: May 30, 1991 - August 30, 1995

***USAID/Russia**

Coop. Agreement No. CCS-0001-A-00-2022-00

Amount: \$400,000

Funding Period: May 27, 1994 - March 31, 1996

***USAID/DESFIL**

Prime Contract No. DHR-5438-C-00-1090-00

Amount: \$547,322

Funding Period: September 30, 1991 - September 29, 1996

***USAID/DESFIL/Senegal**

Prime Contract No. DHR-5438-C-00-1090-00

Delivery Order No. 9

Amount: \$243,444

Funding Period: August 26, 1993 - August 26, 1995

***USAID/DESFIL/Guinea**

Amount: \$11,432

RÓDALE INSTITUTE

Cooperative Agreement No. FAO-0158-A-00-2055-00

FINANCIAL PROFILE OF THE PROJECT

B. SOURCES OF PROJECT FUNDS FOR THE PVO SUMMARY TABLE

A.I.D. Matching Grant	\$313,341
Private	
Cash	\$210,293
In-Kind	\$775,994
Host and Other Governments	
Cash	
In-Kind	
Other A.I.D. Grants/Contracts*	\$533,036
Other U.S. Government	
Other	
UNDP	\$11,101
TOTAL	\$1,843,765

**USAID/Guatemala*

Coop. Agreement No. 520-0000-A-00-1199-00

Amount: \$564,882

Funding Period: May 30, 1991 - August 30, 1995

**USAID/Russia*

Coop. Agreement No. CCS-0001-A-00-2022-00

Amount: \$400,000

Funding Period: May 27, 1994 - March 31, 1996

**USAID/DESFIL*

Prime Contract No. DHR-5438-C-00-1090-00

Amount: \$547,322

Funding Period: September 30, 1991 - September 29, 1996

**USAID/DESFIL/Senegal*

Prime Contract No. DHR-5438-C-00-1090-00

Delivery Order No. 9

Amount: \$243,444

Funding Period: August 26, 1993 - August 26, 1995

**USAID/DESFIL/Guinea*

Amount: \$11,432

Attachment 3

Computation for FY 1994 fixed rate and carry-forward amount

FORMULA FOR COMPUTING CARRY-FORWARD AMOUNT
 FOR FEDERAL GRANTS AND CONTRACTS IN EFFECT
 JANUARY 1, 1995 - DECEMBER 31, 1995

Cost Principles and Procedures for Establishing Indirect Cost and
 Other Rates for Grants and Contracts with the Department of
 Health and Human Services

APPENDIX F

A. FY 1993 Fixed Rate	85%
B. Actual FY 1993 Direct Cost Base	\$1,706,730
C. Amount of Carry-Forward Adjustment Used in Computing FY 1993 Fixed Rate	\$0
D. Actual FY 1993 Indirect Costs	\$1,066,548

x= (ab)-c-d
 x= (85% X \$1,706,730) - 0 - \$1,066,548
 x= \$1,450,721 - \$1,066,548
 x= \$384,173

Rodale had an overstatement of matching funds for FY 1993 of \$384,173. If Rodale and the cognizant agency agree to use the actual costs for FY 1993 to establish the fixed rate for FY 1995 and to use the \$384,17 overstatement as an adjustment for the FY 1995 and 1996 rate computation, the FY 1995 fixed rate is computed as follows:

Actual FY 1993 Indirect Costs	\$1,066,548
Minus 1/2 Carry-Forward Adjustment 1992	\$378,783
Minus 1/2 Carry-Forward Adjustment 1993	\$192,087

Total Indirect Costs	\$495,679 (A)
Actual FY 1993 Direct Cost Base	\$1,706,730 (B)
Fixed Rate for FY 1995 (A)/(B)	29%

50

Attachment 4

Country data sheets (Form 1550-11)

PVO PROJECT REPORTING INFORMATION
ON AID SUPPORTED PVO PROJECTS

OMB No. 0412-0630
Expiration Date: 03/31/89

FOR OFFICIAL USE ONLY

VO Type	Project Number	
Appropriation	Level	
Country Code	Fund Type	Technical Code
Project Officer	Key 1	Key 2

PROJECT INFORMATION (PRIMARY)

Name of Organization RODALE INSTITUTE		Grant/Contract Number FAO-0158-A-00-2055-00
Start Date (MM/DD/YY) 9/29/92	End Date (MM/DD/YY) 9/29/95	AID Project Officer's Name Marguerite Potee

AID OBLIGATION BY AID-FY (\$000)

FY	AMOUNT	FY	AMOUNT

LOP

Activity Description

The project strategy is to develop the capacity of two Regenerative Agriculture Resource Centers (RARCs), in Senegal and Guatemala, to work with farmers, NGOs, and government institutions, improving their capacity to integrate natural resource management concepts into food, fuel, and fiber production systems. The purpose of the RARCs is to build national capacity to manage local resources more effectively by: 1) Gathering and disseminating information on regenerative natural resource management; 2) Increasing community members' capacity to evaluate regenerative agricultural technologies; 3) Encouraging farmers to communicate traditional and innovative technical information among themselves, to scientists, and to policy-makers; and 4) Promote the multiplication of technologies most appropriate to regenerative natural resource management. To this end, the Grant supports the RARCs to: 1) Develop a systematic methodology of monitoring and evaluation project impacts; 2) Streamline accounting and reporting systems; and 3) Improve communication between Rodale Institute, the RARCs, farmers, researchers, and administrators.

Key strategic inputs and activities have been received and implemented: 1) A RARC Coordinator has been hired at Rodale Institute (RI) headquarters to: a) provide overall management of the RARCs, coordinate the flow of information and technical integration of RARC and RI programs; b) develop and manage an accounting and auditing system for RARCs; c) develop long-term strategies for financial sustainability of the RARCs as future independent national institutions; d) manage ongoing monitoring and evaluation; and e) participate in the development of new RARCs; 2) A monitoring and evaluation system to assess the effectiveness and impact of program strategies is in its early stages of development; 3) Internal systems for accounting and reporting have been strengthened; and 4) Linkages between RI and the RARCs have been strengthened to facilitate the management and dissemination of information. Rodale Institute anticipates no problems in meeting the project's expected outcomes by the end of the Grant period. Mid term assessment of the Grant is scheduled for February, 1994 at the Senegal RARC, and for April, 1994 in Guatemala.

COUNTRY INFORMATION (SECONDARY)

Country SENEGAL	Location in Country (Region, District, Village) Thies Department
PIO Representative's Name Dr. Michael Sands	Local Counterpart/Host Country Agency Dr. Amadou Diop

COUNTRY FUNDING INFORMATION (\$000)

YEAR	1992-1993			
AID \$	\$43,725			
PVO \$	87,533			
IN KIND	66,121			
LOCAL				

**PVO PROJECT REPORTING INFORMATION
ON AID SUPPORTED PVO PROJECTS**

No. 0412-0600
Expiration Date: 03/31/89

FOR OFFICIAL USE ONLY

PVO Type	Project Number	
Appropriation	Level	
Country Code	Fund Type	Technical Code
Project Officer	Key 1	Key 2

PROJECT INFORMATION (PRIMARY)

Name of Organization Rodale Institute		Grant/Contract Number FAO-0158-A-00-2055-00
Start Date (MM/DD/YY) 9/29/92	End Date (MM/DD/YY) 9/29/95	AID Project Officer's Name Marguerite Potee

AID OBLIGATION BY AID-FY (\$000)

FY	AMOUNT	FY	AMOUNT

Activity Description

The project strategy is to develop the capacity of two Regenerative Agriculture Resource Centers (RARCs), in Senegal and Guatemala, to work with farmers, NGOs, and government institutions, improving their capacity to integrate natural resource management concepts into food, fuel, and fiber production systems. The purpose of the RARCs is to build national capacity to manage local resources more effectively by: 1) Gathering and disseminating information on regenerative natural resource management; 2) Increasing community members' capacity to evaluate regenerative agricultural technologies; 3) Encouraging farmers to communicate traditional and innovative technical information among themselves, to scientists, and to policy-makers; and 4) Promote the multiplication of technologies most appropriate to regenerative natural resource management. To this end, the Grant supports the RARCs to: 1) Develop a systematic methodology of monitoring and evaluation project impacts; 2) Streamline accounting and reporting systems; and 3) Improve communication between Rodale Institute, the RARCs, farmers, researchers, and administrators.

Status

Key strategic inputs and activities have been received and implemented: 1) A RARC Coordinator has been hired at Rodale Institute (RI) headquarters to: a) provide overall management of the RARCs, coordinate the flow of information and technical integration of RARC and RI programs; b) develop and manage an accounting and auditing system for RARCs; c) develop long-term strategies for financial sustainability of the RARCs as future independent national institutions; d) manage ongoing monitoring and evaluation; and e) participate in the development of new RARCs; 2) A monitoring and evaluation system to assess the effectiveness and impact of program strategies is in its early stages of development; 3) Internal systems for accounting and reporting have been strengthened; and 4) Linkages between RI and the RARCs have been strengthened to facilitate the management and dissemination of information. Rodale Institute anticipates no problems in meeting the project's expected outcomes by the end of the Grant period. Mid term assessment of the Grant is scheduled for February, 1994 at the Senegal RARC, and for April, 1994 in Guatemala.

COUNTRY INFORMATION (SECONDARY)

Country Guatemala	Location in Country (Region, District, Village) Peten Region
PVO Representative's Name Dr. Michael Sands	Local Counterpart/Host Country Agency Dr. Sergio Ruano

COUNTRY FUNDING INFORMATION (\$000)

YEAR	1992-1993			
AID \$	\$218,427			
PVO \$	0			
INKIND	129,889			
LOCAL				

Attachment 5
Original logical framework

4/2

LOGICAL FRAMEWORK

INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS
GOAL		
<p>To increase the ability of low-income farmers to more effectively manage their natural resources to meet immediate needs for food, fiber and fuel while enhancing future resource productivity.</p>	<p>Specific indicators to be determined during design of methodology. Illustrative indicators are: locally available food increased by X% while soil loss reduced by X%.</p>	<p>Evaluation reports. Local marketing statistics.</p> <p>1. Thies & Peteri regions do not experience drought or other natural disaster. 2. Government remains politically and economically stable. 3. Climate for NGO activity remains favorable.</p>
PURPOSE		
<p>1. Increase effectiveness, efficiency and impact of RARC</p>	<p>Guatemala/Senegal RARC's are able to:</p> <p>a). Collect, analyze and use data (sex-disaggregated) on farming and resource utilization practices to refine program for increased impact.</p> <p>b). Collect, analyze and use information on changes in the natural resource base program for increased impact.</p> <p>c.) Prepare timely, useful reports for donors & host country collaborators (as appropriate), including both information on program activities & achievements, and financial information.</p> <p>d.) Analyze budget data & spot potential problem areas.</p> <p>e.) Identify and respond to appropriate requests for technical information in a timely and useful fashion.</p>	<p>Quarterly reports to A.I.D.</p> <p>Project evaluation report.</p> <p>Annual financial reports. Final report.</p> <p>Monitoring and evaluation methodology will provide information needed in cost effective way.</p> <p>RI internal systems and reporting requirements can be synchronized with international programming requirements.</p>

2. Increase availability & utilization of information on regenerative agriculture.

a). 20% more M/F farmers in Guatemala and Senegal use nutrient cycling techniques (e.g. compost, residue management) in household food production.

Evaluations to be completed based on design methodology developed by M/E consultants.

Effective technologies can be developed that are acceptable to farmers, both M & F.

b). Other indicators to be developed for Guatemala when work-plan completed.

Baseline data points and key indicators to be developed by M/E consultant and CUDEP staff. Annual sampling coordinated by National M/E/T and CUDEP students.

c). 25% of NGO's, government extension workers involved in agricultural development disseminate information on regenerative agriculture in Senegal; 40% groups involved in natural resource management in Guatemala.

Indicators reported by participating NGO's

d). 35% HH that NGO's work with, in Senegal farmers/farm organizations receive this information on regenerative agriculture technical development in at least 50% new HH in Guatemala.

Final report.

Current levels of collaboration between RARCs, NGOs and government remains viable and are not jeopardized by political and/or economic events.

3. Replicate.

Rodale Institute ready to implement program in two new locations, one each in Latin America and Africa.

Final reports.

RI-NGO-host government agreements.

Existing NGO contacts in probable new RARC site countries remain interested & governments there continue to provide favorable climate for NGO activity.

OUTPUTS

1. Effective monitoring of evaluation methodology and system.	Program refinements and adoptions made after evaluation methodology and baseline survey completed.	Quarterly reports. Annual workplans.	Cost effective methodology can be developed to measure program impact (in terms of socio-economic impact, impact on resource base, and process orientation) across multiple countries.
2. Streamlined accounting and reporting systems.	Accounting and record procedures are documented and provided to staff.	Observation.	
3. Improved information for:			
a). Increased communication between RI & RARCs.	More effective use of computer conferencing.	Observation	Existing telecom systems are maintained and improved.
b). Increased communication between RARCs and larger audience.	More RARC information in Int'l Ag-Sieve.	Newsletter	Ag-Sieve continues to grow in readership.
4. Program Evaluations			
a). Senegal	Initial baseline survey/evaluation.		
b). Guatemala	Baseline survey.		Political situation allows rural surveying.
5. Trained staff in monitoring evaluation methodologies, report preparation, accounting, and information systems delivery.	At least three staff members per RARC will have received training to strengthen internal systems.		
6. Senegal			
More effective & more widely distributed publications.	a). Entre-Nous circulation increased from 300 to 1000	Quarterly and annual reports.	Clear, concise information, coupled with workshops and collaborative efforts with RARC staff, provided to host country agricultural professionals on regenerative agriculture can influence and expand their approaches to technology development and information dissemination.
	b). At least 6 press releases per year on regenerative agriculture technologies to major Senegalese newspapers, especially Le Soleil, and radio stations.	Copies of papers with articles.	

7. Series of 3 annual training workshops for Peace Corps and other NGOs.

a). Senegal-- curriculum developed for 3 workshops
- soil conservation/ erosion control
- composting
- legumes

b). Guatemala-- curriculum developed for 3 workshops
- soil conservation/ erosion control
- composting/legumes
- management of household gardens

Observation.

Attendance reports.

8. Trained Peace Corps volunteers working This region.

4-5 PCV's working on agriculture projects.

P.C. Senegal reports.

Negotiations with Peace Corps/ Senegal are successfully completed and PCV recruited.

9. Training Materials

Senegal--
Yr. 1, 1 technology brochure w/poster
Yr. 2, 3 technology brochures w/poster
Yr. 3, 5 technology brochures w/poster
Each year - 1 brochure on a process or methodology.

Copies of brochures and posters.

Existing office equipment and desktop publishing capabilities are enhanced.

10. Replication

Host country agreements signed and workplans prepared for new RARC's. Initial funding strategies developed. Collaborators identified.

Agreements with host governments, one each in Latin America and Africa.

Observation.

Host country governments & NGO's continue to seek Rodale Institute assistance; additional start up funds for staffing and other expenses are obtained; host country NGO's continue interest in collaboration.

11. Plans developed for organizational & financial sustainability in Senegal and Guatemala.

Plan designed and agreement reached among collaborating institutions.

Observation.

Funding to supplement core Rodale Institute support can be obtained.

Attachment 6

Senegal RARC publication samples (Project Officer copy only)

- a) Copy of Entre Nous
- b) Copy of compost booklet
- c) Copy of compost poster