

PD-AAT - 179  
5210122  
10N 44709

UNIVERSITY OF MAINE AT ORONO  
AGROFORESTRY OUTREACH RESEARCH PROJECT  
QUARTERLY REPORT  
FOR THE PERIOD ENDING MARCH 31, 1986  
BY  
MARSHALL D. ASHLEY  
TEAM LEADER  
AND  
AFORP STAFF

521 - 6122 - C 003 010 00

UNIVERSITY OF MAINE AT ORONO  
QUARTERLY REPORT FOR THE QUARTER ENDING  
MARCH 31, 1986

OVERVIEW

The Agroforestry Outreach Project has now been underway for more than 12 months and some of its components have been or are near completed. The status of each of the components and subcomponents is shown in figure 1 on the next page. Following that is my overview of each component, followed in turn by the full reports by each investigator.

All of our research should provide USAID and the AOP implementing Grantee staffs with a better understanding of the project's impact on Haiti. Several results and recommendations for strengthening or changing Grantee behavior should also be particularly useful at this time when the follow-on to the present project is being designed.

Particularly interesting is Gerry Grosenick's economic evaluation of the project. It indicates that the project is performing even better than projected in the Project Paper. I feel his estimates are conservative and that the benefits to small farmers are even higher than his calculations show.

Also worthy of note is that our data and staff inputs continue to support the work of other projects. Lisa Mc Gowan's marketing studies and data were used and credited several times in a recent report on coal briquetting by Oakridge Laboratories to the Haitian Ministry of Mines and Energy Resources.

Project Component	Percent Completed	Comments
Traditional Agroforestry	100%	
Silviculture	100%	
Nursery Outplanting Species Trials	Nursery 50%	Outplanting tools Sub component not done
	Species trials 30%	
Consumer Preference	25%	Delayed by Project Wide C/B analysis
Cost/Benefits	Project Wide 98%	
	Traditional 25%	
Wood Marketing	90%	Draft Final Review Report in
Planter Decision	95%	Final Draft in Review
Socio-Economic Profiles	95%	Final Draft Report in Preparation

Figure 1. AFORP Status by Components as of March 31, 1986

### SYNOPSIS BY COMPONENTS

As in previous periodic, project status reports, a synopsis of each component is given before the more detailed report to highlight the activities and findings of our work on that component.

#### Traditional Systems:

This component is essentially completed and the final report is now in editorial review. Some more work is needed to complete that already reported upon and this will be undertaken in the proposed, forthcoming AFORP extension from September to December of this year.

Several recommendations for changing or strengthening AOP Grantee, CARE and PADF, behavior are made in the final report. These coupled with the recommendations which are coming from components (eg., using different seedling containers than are now used) could significantly increase the survival rate of AOP planted seedlings.

These recommendations are as follow:

1. AOP trees should be planted at wide spacings within gardens, pruned to reduced shade, planted on garden borders or as living contours and consist of species which don't give excessive shade,
2. the number of trees distributed to individual farmers should be flexible within some maximum and minimum limits (to minimize logistical problems a slightly modified distribution system is suggested,
3. an economic analysis should be done to find if growing tree crops is more profitable than raising other crops. If so, it is recommended that CARE and PADF develop materials and demonstrations on maximizing wood production for various species under a range of spacing, thinning and pruning regimes,

4. nursery production should begin one or two months earlier than done now to assure acceptable seedlings when the seasonal rains come.

5. explanations and demonstrations of the use of AOP trees for cut and carry, controlled grazing, including trimmings from hedges grown for boundary or living contour plantings, should be put into the CARE and PADF outreach programs, and

6. Forestry Support Program and USAID Science and Technology Staff should be requested to provide a summary of potential uses, including utilisation methods, for the exotic species being introduced by the AOP and that this be put in as non-technical forms as possible so that CARE and PADF can adopt it in their outreach programs.

#### Nursery, Outplanting, and Species Trials:

Not much work has been done this quarter on this component. Roland Dupuis, principal contractor for this research, has only recently arrived back in country to begin the final phases of his work. A review and updating of all data and files has been done and a work schedule to complete the measurement of all outplanting and species trials has been put together.

#### Silvicultural Research:

The final report under the present contract has already been submitted. Results from this research included the formation of biomass data for six tree species. The dry weight, biomass data has been put in equation, graph and table form for Leucaena leucocephala, Azadirachta indica (neem), Eucalyptus camaldulensis, Prosopis juliflora (Bayahonde), Cassia siamea, and Colubrina arborescens (Kapab).

This report will soon be subdivided into several working papers, one of each species. Many Grantee staff have already expressed an interest in using these tables in explaining productivity to their animators and farmers. This data was also used in cost-benefit analysis of the AOF done by AFORF researcher Gerold Grosenick.

A description of the establishment of a Cassia siamea and Leucaena leucocephala coppicing experiment near Cap Haitien is also given in this report. The first application of treatments and remeasurement was done approximately six months after establishment in early March, 1986. The treatments in two replications were coppice to one stem, coppice to three stems and allowing all stem sprouts to grow. Where thinning to one or three coppice stems per stump was done, the more dominant sprout based on initial height growth were selected for retention. A report summarizing this initial treatment will be written next quarter and the first definitive results should be available after remeasurements in 1987.

Some problems were encountered. A few stumps that were to be coppiced to three stems, only had two to begin with. Also a few of the Leucaena coppices remaining after treatment were accidentally snapped off when removing vines from around them.

The final report recommended several areas of further silvicultural research. These included additional biomass studies of the same and new species over a range of environmental conditions. Also suggested is research on the productivity of various agroforestry systems such as alley cropping of fruit trees with leucaena.

Cost Benefit Analysis:

This quarter was spent doing an economic evaluation of the entire ADF. The internal rate of returns (IRR) for CARE and FADP are 19.1% and 14.4%, respectively. These are better than that foreseen in the USAID Project Paper. Also the cost per surviving seedling was less than one-quarter the amount projected in the Project Paper.

As an important aside, this lower cost was obtained even with a less than expected average survival. If significant gains in survival can be obtained by following the recommendations of this project and those made by others (eg., Roger Webb's recommendations from his evaluation of the Fruit Tree Project), this cost per seedling will further even be reduced.

The ODH commercial plantation operation has had much less success. Their IRR is less than 4 percent.

#### Marketing Studies:

As in several of the other components, much of this quarter has been spent in writing the final report. A draft of this has been completed and is now in review.

Early in the quarter some field activity was also completed. In January the second Port-au-Prince wood products delivery survey was conducted. A third and final survey will be conducted as part of our extension activities. Other planned field activity early in the quarter was disrupted greatly by the civil disorder occurring over that period. A few post harvest surveys were made in three districts. The majority of farmers surveyed used their initial harvests to make charcoal. However, this sample was so small (only 16 farmers) that much more data must be collected to properly give a valid picture of what farmers are going to do with their trees.

Some training of animaters on how to collect pole and plank survey data was given to PADF personnel. Two seminars were used to present the standardized procedures needed to collect useable information.

The final, revised report on all the work on this component will be done by mid-April.

Sociological:

This research consists of the Planting Decision Study and Socio-economic subcomponents. Both subcomponents are nearing completion.

The planting decision study subcomponent final draft report has been prepared and is now in review. This study was designed to gain an understanding the reasoning behind the way in which ADF participating farmers incorporated our trees into their farm systems. This understanding will then in turn be used to refine AOP policy and Grantee extension work.

A synopsis of the results from this work is as follows:

1. planter decisions would be more effective if the Grantee extension agents discussed planting decisions in terms of the farmers' strategies for the best use of their lands (eg., the agricultural production system desired),
2. there is no need to emphasize the planting of trees on tenure secured lands, as the cultivators already well understand their options on this now,
3. the use by the farmers themselves of seed and seedlings from AOP trees on their farms should be encouraged, along with management techniques such as pruning, thinning, and harvesting,

4. the Grantees should incorporate more on the use of AOP trees for soil improvement (eg., erosion control, moisture retention, replenishment of soil nutrients, etc.) in their outreach programs.

5. the use of trees for windbreaks to improve crop production should be included in the Grantee programs, and

6. there should be an increased emphasis by the Grantees in planting trees with the land poor with small land holdings.

The other subcomponent, the socioeconomic profile study, is being conducted in two contrasting sites. One hundred fifteen (115) farmers in Fonds des Blancs and 91 in Beaumont have been intensively surveyed to characterize the influence the AOP on them and the community in general. The scope of the original study has been expanded to include investigation of planter decisions, the local agricultural economy, traditional systems of agroforestry, and to the characterization of ecological factors pertinent to understanding farmer behavior.

A draft summary report is in preparation and will be completed soon. Some topics which will be discussed in this report include;

1. the inequity with regard to AOP participation across rural social classes for the two areas studied,
2. the documentation of traditional agroforestry systems, and
3. the exploration of peasant motives for planting AOP trees.

Recommendations and conclusions are made with an emphasis on the need for locally appropriate technical assistance and the utility of indigenous technical knowledge in any future AOP extension effort. The work of this component will be expended upon in the proposed AFURP extension.

APPENDIX AA QUARTERLY REPORT FOR TRADITIONAL AGROFORESTRYSYSTEMS RESEARCH FOR THE PERIOD ENDINGMARCH 31, 1966BYMARSHALL D. ASHLEYTEAM LEADER

Most of this quarter has been spent in summarizing and analysing data, and preparing the final report for this research. The draft final report has been submitted to the Project Manager for USAID review.

Several recommendations for the AOP have come from this study. Modification of present project operating procedures by the grantees, CARE and PADF is suggested along with a strengthening of their outreach programs. The recommendations are as follows:

1. AOP trees should be planted at wide spacings within gardens, pruned to reduce shade, planted on garden borders or as living contours and consist of species which don't give excessive shade.
2. the number of trees distributed to individual farmers should be flexible within some maximum and minimum limits (to minimize logista' problems a slightly modified distribution system is suggested.
3. an economic analysis should be done to find if growing tree crops is more profitable than raising the crops. If so, it is recommended that CARE and PADF develop materials and demonstrations on maximizing wood

production for various species under a range of spacing, thinning and pruning regimes.

4. nursery production should begin one or two months earlier than done now to assure acceptable seedlings when the seasonal rains come.

5. explanations and demonstrations of the use of AOP trees for cut and carry, controlled grazing, including trimmings from hedges grown for boundary of living contour plantings, should be put into the CARE and PADF outreach programs, and

6. Forestry Support Program and USAID Science and Technology Staff should be requested to provide a summary of potential uses, including utilisation methods, for the exotic species being introduced by the AOP and that this be put in as non-technical terms as possible so that CARE and PADF can adopt it in their outreach programs.

If implemented, these recommendations should result in increased project performance and benefits to the project's participating farmers. Among the benefits should be a substantial increase in survival.

Worthy of note is that CARE and PADF have already initiated some of the above recommended actions in some regions. However, these actions need to be implemented project wide and the Grantee staffs will probably have to be expanded to implement their increased outreach role. Their present outplanting activities.

Major problems were encountered in completing the report. A gas shortage precluded the collection of some data and the civil unrest of recent months severely disrupted the schedule for the reports final preparation. However, an extension of this work has been proposed to complete the collection of data for those parts of the study where the AOP

would benefit from the additional data. If funding is forthcoming, this work will be completed this fall.

Some need for further research on traditional systems and on AOP project farms has been identified. The crop species, associations and calendars should be completed for some zones and verified for the spring season for others. More work on the technical and sociological aspects of how and why farmers control shade is also recommended. Most importantly, new research is needed on the causes of the mortality of trees planted in gardens, particularly those planted within the AOP project.

APPENDIX BA QUARTERLY REPORT ON NURSERY, OUTPLANTING AND  
SPECIES TRIALS FOR THE PERIOD ENDING MARCH 31, 1986

BY

ROLAND DUPUIS, RESEARCH FORESTER

Before I begin this brief quarterly report, I would like to thank Peter Welle and Gerald Larson of ODH for their assistance with the establishment and fencing of the container/mix and the growth schedule trials in Bon Repos (Nadal plantation). Without their assistance and logistical support, these trials would not have been planted.

On March 19, I began the third phase of my contract. During this brief period contact was made with field personnel who have been recording rainfall and watching over the research sites. All nursery, outplanting and species trial files have been reviewed and updated so that the status of work completed for each trial in attaining research goals is clear. The production of a work schedule has been completed and the remeasurement of research trials will commence on April 1st, 1986.

## APPENDIX C

A QUARTERLY REPORT ON SILVICULTURAL RESEARCH  
ACTIVITIES FOR THE PERIOD ENDING MARCH 31, 1986

BY

MARSHALL D. ASHLEYTEAM LEADER

The final report for this component was submitted late in the quarter. The results of a biomass study for five species commonly planted in the AOP and for one of the most commonly used routine agroforestry species, Bayahonde, are given in that report. Dry weight biomass equations and tables for leucaena leucocephala, Azadirachta indica (Neem), Eucalyptus camaldulensis, Prosopis juliflora (Bayahonde), Cassia siamea, and Colubrina arborescens (Kapab) are presented.

A description of the establishment of a Cassia and Leucaena coppicing experiment near Cap Haitian is also given in this report. The first application of treatments and remeasurement was done approximately six months after establishment in early March, 1986. The treatments in two replications were coppice to one stem, coppice to three stems and allowing all stem sprouts to grow. Where thinning to one or three coppice stems per stump was done, the more dominant sprouts based on initial height growth were selected for retention.

Some problems were encountered. A few stumps that were to be coppiced to three stems, only had two to begin with. Also a few of the leucaena coppices remaining after treatment were accidentally snapped off

when removing vines from around them. A report summarizing the initial treatment were accidentally snapped off when removing vines from around them. A report summarizing the initial treatment will be written next quarter.

The final report recommended several areas of further silvicultural research. These included further biomass studies of the same and new species over range of environmental conditions in Haiti. Also suggested is research on the productivity of various agroforestry systems such as alley cropping of fruit trees with lucaena.

APPENDIX DQUARTERLY REPORT  
FOR THE PERIOD ENDING MARCH 31, 1986

BY

GEROLD GROSENICKTEAM ECONOMIST

This quarter was spent preparing the economic evaluation now under way. The final version was submitted to the evaluation team on March 31. This report is also considered an interim report for the UMO Cost-Benefit Study.

This initial evaluation shows that the small farmer programs run by PADF and CARE have internal rates of return of 12.8% and 19.1%, respectively, as a combined IRR of 14.6%. These rates compare very favorably with the rates foreseen by the Project Paper: 9.1% for PADF and 8.6% for CARE.

The actual cost per surviving tree also compares very favorably with those of the Project Pages. The costs estimated in the PP were \$2.88 and \$3.49 per tree for CARE and PADF, respectively. The actual costs, through 1985 are in the range of 65 - 75 cents per tree for both programs.

The evaluation of the industrial forest plantation component run by ODH was not encouraging. The IRR is 3.7% for the most productive of the ten plantations. If administrative costs are included, the IRR decreases to 1.1%.

Activities for the Period April 1 - June 30

- Consumer preference studies to continue.
- Report on Wood Product price trends.
- Report on Wood Product supply surveys.
- Report on Case Study Analysis.
- Project design.
- Vacation.

APPENDIX EQUARTERLY REPORT FOR THE PERIODENDING MARCH 31, 1986SUBMITTED BYLISA A. MC GOWAN, RESEARCH ECONOMISTWOOD MARKETING SUBCOMPONENT

The work period between Jan. 1, 1986 and March 31, 1986, has been spent primarily in analyzing data and writing the final report for the Wood Marketing Subcomponent, due April 15, 1986. Field work completed during this time included the second repetition of the seven day, 24-hour a day, count of wood products coming into Port-au-Prince, as well as trips to Savanne Carree, Limonade, and Les Cayes.

The first two weeks of January were spent preparing for and supervising the Port-au-Prince supply survey, and then coding the forms for entry into the computer. Entering the data took another week. A third repetition of the survey is planned for some time after the end of my contract, and final analysis of all three surveys will then be completed.

Two seminars were attended at PADF to meet with the coordinators and assistants conducting the pole and plank price questionnaires for UMO. The purpose of these meetings was to standardize the methods for completing the questionnaires. During this time appointments were also set up to visit field sites where project planters had harvested poles. Dates were arranged for the month of February, but because of the restricted travel arising from the political situation, only trips to Limonade,

Savanne Carree, and Les Cayes were conducted. Harvest studies were administered during this trip. Though at least ten people had been identified in these areas to have harvested poles, in fact only 2 of the farmers had cut poles; the rest had made charcoal.

The rough draft of the final report of the wood marketing subcomponent was written between February 1, but delays caused by repeated days of unrest due to the political changes, the subsequent inability to get to the office (six days total), and the distractions of that time in general, the report was somewhat delayed. These events, however, should have no great affect on the final report, due April 15.

APPENDIX FQUARTERLY REPORTFOR THE PERIOD ENDING MARCH 31, 1986SUBMITTED BYFRED J. CONWAYSenior Anthropologist ConsultantPlanter Decision.

During the quarter, field research was completed and a draft final report submitted. Return field visits were made to five of the study sites: Calbasse, Duplessis, Trouin, Desforges and Savanne Mole. The research schedule was changed and the most important return visits were completed just before the change in government in early February.

It was decided to make return visits to the farms studied previously rather than to add new sites to the sample. This proved to be a fruitful strategy. Interviewees were more relaxed and open than during the initial visits. They were willing to discuss their landholdings and agricultural strategies in greater detail. There is so much to see on each farm visit that the follow-up visits helped to focus questions and clarify several points of detail. They also provided an indication of regional variation. At least one planter was added to the sample in each of the sites. Two planters proved to be unreliable and were dropped from the sample.

The remainder of the quarter was spent drafting a final report. The report discusses ecological variation by comparing two contrasting sites and then discusses tree-planting decisions and changes in agricul-

tural and soil conservation practices. The report also discusses tree planting and land tenure strategies. It concludes with a number of recommendations for project policy and extension. The report was drafted in less than tranquil conditions and was submitted a week later than expected. It is not anticipated that there will be a problem in completing the final report by April 15.

APPENDIX G  
QUARTERLY REPORT OF THE RESEARCH ANTHROPOLOGIST  
FOR THE PERIOD ENDING  
MARCH 31, 1986

Anthony Balzano

Anthropologist Research Assistant

I. Progress To-Date

Two Village Study Sites have been established and indepth anthropological research into the nature of agroforestry and its impacts on the rural agricultural economy has been conducted. The first Village Study Site was established at Fond-des-Blancs, Commune d'Aquin, Departement du Sud on June 10, 1985; the study area demarcated there is called Mon Vet. The second Village Study Site was established at Beaumont, Commune Corail, Departement de la Grand'Anse on November 17, 1985; the study area demarcated there is called Anba Cafe.

The role of the Anthropologist Research Assistant for the University of Maine Agroforestry Outreach Research Project is to establish the two Village Study Sites and to construct Socio-Economic Profiles for each site. Toward that end, a socioeconomic and agricultural survey was applied to 115 cultivate at Mon Vet and to 91 cultivate at Anba Cafe.

However, research has gone well beyond the assignment to construct Socio-Economic Profiles to include investigations on planting decisions, the local agricultural economy and traditional agroforestry;

and the collection of socio-cultural and ecological data relevant to those subjects.

A Draft Final Report is now under preparation. In brief summation, the Draft Final Report will 1) show that there is measure of inequity with regard to Aop participation across rural social classes, 2) document a traditional agroforestry system, and 3) explore peasant motives for planting AOP trees. Recommendations and conclusions are made with an emphasis on the need for locally appropriate technical assistance and the utility of indigenous technical knowledge in any future AOP extension effort.

## II. Future Research

Scheduled field research has been completed as per my contractual obligations (contract period May 7, 1985 - May 6, 1986). What remains is the analysis of quantifiable data on the computer and the interpretation of the results in the context of additional qualitative data. Barring unforeseen problems all data will be reported as per the specified deadlines. Thus, of the total work requirement specified in my University of Maine contract 95% of it will be completed by March 31, 1986.