

AN ASSESSMENT OF THE POTENTIAL
FOR PEACE CORPS-USAID-HOST COUNTRY COOPERATION
IN SOCIAL FORESTRY PROJECTS

BOTSWANA

A REPORT PREPARED

by

Dan Heinz¹

and

Mike Davis²

Office of Program Development

PEACE CORPS

Washington D.C.

March 1981

1 Box 400
Butte, Montana
59701

2 427 11th Street
Alamosa, Colorado
81101

EXECUTIVE SUMMARY

BOTSWANA

I. HOST COUNTRY GOVERNMENT/AGENCIES

Past development programs have concentrated on upgrading the educational system, improving village facilities, i.e. water supply and health care, and planning land use.

Major natural resource concerns in Botswana are: overgrazing, a decreasing supply of wood for fuel and building materials, inadequate agricultural land management, and wildlife management. The Botswana Government, in conjunction with several international donor agencies, has instituted programs that address some of these concerns. The Ministry of Tourism and Commerce is currently undertaking a program designed to improve rural populations use of wildlife for food and cash income. The Tribal Grazing Land Policy, addressed current and potential overgrazing problems through a re-assessment of the land-use and land tenure system in Botswana.

The Botswana Forestry Department is under the Ministry of Agriculture. A new Forestry Officer has been appointed, filling a position that has been vacant for the past eight years. The Forestry Department concentrates on establishing nurseries and selling commercial timber. The Department is expanding its nursery system and is initiating a natural woodland management project under the Matsheny Village Development Plan. The U.S. Agency for International Development is involved in the project and Peace Corps has been asked to participate.

The Ministry of Agriculture oversees the Agricultural Demonstrators(ADs), who are the primary extension service in Botswana. The ADs concentrate on providing assistance in crop farming and livestock operations but also assist farmers in woodlot development, soil conservation practices, and other natural resource activities. The Forestry Department relies on the ADs to conduct forestry extension work.

Another group working in natural resources has been the brigades. Designed to provide training to young Batswana in a variety of fields, the brigadas have been the most active organization in Botswana in establishing tree nurseries and woodlots. The brigades have received both financial and personnel support from private and international donar organizations.

II. PEACE CORPS

Peace Corps Botswana(PC/B) has little experience in forestry and natural resource projects. One PC/B staf person has an agricultural background.

PC/B is trying to recruit a volunteer to work in the forestry component of the Matsheny Village Development Plan. The volunteer will be involved in nursery development , woodlot establishment, and natural woodland management. The Forestry Department will accept a skill-trained forestry volunteer and the Department has offered material support and transportation for the volunteer. Manpower shortages in the Botswana Civil Service may prevent counterparts from participating in the project.

If Peace Corps Botswana expands its forestry efforts in the

future, technical program support would be desirable.

III. U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

AID/Botswana(AID/B) is currently involved in an afforestation program through an Agricultural Production and Income Project. Other AID/B efforts include involvement in the Arable Lands Development Program, providing assistance in establishing range monitoring capabilities in the Ministry of Agriculture and in funding training opportunities for Botswana in a variety of fields. AID/B is also working with the Botswana Wildlife Department on a proposal to improve utilization and management of wildlife by rural populations.

IV. TRAINING

Skill-trained forestry volunteers were acceptable to all parties interviewed by the assessment team. Botswana officials were very interested in training PC Volunteer counterparts but stressed that the training must address the tasks required in specific projects. Training facilities are available in Botswana.

V. FORESTRY PROJECT PROGRAMMING

PC/B and AID/B are both interested in forestry and natural resource projects. Further discussions are necessary to clarify how the two parties can best assist the Botswana Government and establish complementary roles in such projects. In order for PC/B to expand its efforts in forestry, it may have to reduce activities in other areas.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	i
LIST OF ACRONYMS.....	v
INTRODUCTION.....	vi
PREFACE.....	vii
ASSESSMENT.....	1
I. HOST COUNTRY GOVERNMENT.....	1
II. PEACE CORPS.....	7
III. US AGENCY FOR INTERNATIONAL DEVELOPMENT.....	8
IV. TRAINING.....	9
V. FORESTRY PROJECT PROGRAMMING.....	10
APPENDICES.....	12
A. Itinerary	
B. Assessment Team Briefing Issues	
C. Evaluation of Rural Sector Grant	
D. Wildlife Management Project Memorandum	

LIST OF ACRONYMS

ADs.....Agricultural Demonstrators
AID.....Agency for International Development
AID/B.....AID Mission to Botswana
ALDEP.....Arable Land Development Program
PC.....Peace Corps
PC/R.....Peace Corps Botswana
PCV.....Peace Corps Volunteer
TGLP.....Tribal Grazing and Land Policy

INTRODUCTION

This report has been prepared for the Forestry Sector in the Office of Program Development of Peace Corps in conjunction with the PC/AID PASA (#936-5519). This report presents a brief overview of the institutions and activities concerned with forestry and natural resource projects in Botswana. The information will assist the Peace Corps and AID Washington staff to design and implement future forestry PASA activities through a better understanding of field operations and needs. Also, it is hoped that this report will provide in-country donor agency staff and government officials with an objective perception of current environmental projects, institutional capabilities and relationships, and possible areas for expansion.

The issues presented correspond to an outline (Appendix B) that Peace Corps/Washington provided each assessment team. We suggest that the reader review this outline of issues prior to reading the report to facilitate understanding the format and content. The issues were chosen because they will influence future Peace Corps, AID, and host country agency collaborative forestry efforts.

During the ten-day visit to Botswana, interviews were conducted with key personnel from Peace Corps, AID, and host country ministry institutions involved in forestry and natural resource activities. Site visits were also made to representative project areas and institutional facilities within the country.

The content of the report represents the authors' viewpoint resulting from the interviews, site visits, and review of documents. The authors wish to express their appreciation to all who contributed to making the visit complete.

PREFACE

Botswana is located in Southern Africa. The total land area is roughly equivalent in size to the state of Texas and the population is approximately 750,000. The population is concentrated primarily in the eastern part of the country. Climatically, Botswana can be characterized as arid, with most of the country receiving less than 650 mm (25 inches) of precipitation annually.

Major land uses in Botswana are: cattle raising, subsistence farming in the eastern part of the country, and wildlife. The land tenure system in Botswana is one of communal land administered by District Land Boards and large game parks and reserves administered by the central government. There are some privately owned farms and some land areas under long-term lease for cattle raising.

I. HOST COUNTRY GOVERNMENT ISSUES/ACTIVITIES

A. Host Country Government Priorities

The Botswana Government development programs have focused on: upgrading the educational system, improving village facilities (i.e., health and water), and planning land use. There have also been programs in rural industrial development, ranch development, wildlife management, and range monitoring. Many donor agencies are involved in programs in these areas.

Major natural resource concerns facing the Botswana government are overgrazing, a decreasing supply of fuelwood and wood for building materials, inadequate agricultural land management, and wildlife management. These concerns are discussed below.

1. Overgrazing: This is the most serious resource problem in Botswana. Overstocking of cattle reduces ground cover and causes serious sheet erosion and localized gully erosion. Overstocking occurs mainly in the eastern part of the country but it is expanding into the more ecologically sensitive western part of the country. Government sponsored water development programs and longterm leasing of ranch areas by private individuals are contributing to this westward expansion. The result of overstocking and increased erosion is loss of land productivity and increased susceptibility to drought.

2. A decreasing supply of fuelwood and wood for building materials: This is occurring around Botswana's major towns and villages due to high

demand for these commodities. The problem is aggravated by heavy grazing around population centers, which severely reduces the rate of natural regeneration.. The result is that Batswana living in these areas must make an increasingly greater effort to obtain fuelwood and building materials. The people primarily affected by these shortages are women who depend on the native forests for their domestic wood supply and commercial woodhaulers who are usually small entrepreneurs.

3. Inadequate agricultural land management:

Botswana's primary agriculture crops are sorghum and maize. Botswana is not currently self-sufficient in either of these grains but has set self-sufficiency as an agricultural goal. In order to achieve this, more land will have to be put under cultivation each year and existing farm land be more intensively managed. This will increase demands on farm land in the eastern part of Botswana, reducing grazing and forests and increasing potential erosion from agricultural lands.

4. Wildlife management:

Botswana has a rich wildlife resource located primarily in the north and in the Kalahari Desert area. There is a large park and reserve system designed primarily for the preservation of wildlife and as a tourist attraction. In order to preserve the ungulate herds,

the migration route must be maintained. Although parts of the route are preserved, there is concern that a large portion of the route in the western part of the country will be and to some extent already has been cut by expanding cattle ranch operations.

Wildlife is a resource that has a large potential for providing subsistence to people living in rural areas. In addition, there is potential for expanding local commercial use of wildlife products through increased utilization of meat products and hides.

B. Government Efforts in Natural Resources

The Botswana Government addresses natural resource issues through several agencies. One of the principle organizations is the extension service. Under the Ministry of Agriculture, Agricultural Demonstrators(ADs) provide extension assistance to farmers and rural land owners. In the past, the ADs have concentrated their efforts on crop farming and livestock. However, the ADs responsibility extends to the broad range of conservation practices and individual ADs have become involved in woodlots, soil conservation work, and nursery development.

The organizational structure that the ADs work in is depicted in the following diagram.

MINISTRY OF AGRICULTURE

REGIONAL AGRICULTURE OFFICE

DISTRICT AGRICULTURE OFFICE

AGRICULTURAL DEMONSTRATOR

At the top level in the organization, the Ministry of Agriculture provides financial support, conducts country-wide planning and provides technical support through its departments. The Regional Agriculture Office primarily conducts technical and regional planning and is responsible for administering the regional level offices. The District Agriculture Office directly supervises the ADs and works with the local planning agencies. The Agricultural Demonstrators work at the local level, operating through chiefs, headmen and village development committees. The ADs are important linkages between the central government and the rural people.

A second group that addresses natural resource issues is the brigade system in Botswana. The brigades were originally created to provide vocational training to young Botswana in a variety of trades from textiles to forestry. The brigades were to undertake this training in a manner that would enable them to be self-sufficient through the sale of their products or services. The brigades have been the most active organization in Botswana in establishing woodlots. The brigades have obtained a great deal of financial and personnel support from private and international donor groups. Recently, the Botswana Government has begun to review the brigades activities because the brigades have been increasingly unable to support themselves. The result of this review is expected to be a reorganization and redirection of the

brigades.

In 1975, the Botswana government began a major land use planning effort, the Tribal Grazing Land Policy (TGLP). This was an attempt to deal with the current and potential overgrazing problems through a reassessment of the land use and land tenure system in Botswana. The planning efforts expanded beyond grazing considerations in recognition of the interactions that exist in any resource allocation system. The implementation of TGLP has been widely criticized because it has been perceived to primarily benefit the wealthier segment of the population. Nevertheless, it did raise public awareness of natural resource problems and opened public debate on resource related questions. It also illustrated the Botswana Government's concern about natural resources.

C. Forestry Department Efforts

The Botswana Forestry Department is in the Ministry of Agriculture. The following diagram illustrates the organizational structure.

Permanent Secretary of Agriculture
Land Utilization Department
(within the Ministry of Agriculture)
Forestry Officer
(Chief of Forestry Department)
Nursery Managers

The Minister of Agriculture has reestablished the Forestry Department by hiring a new Forestry Officer. This position has not been filled for eight years. The Forestry Department concentrates on two activities. One is the establishment of nurseries.

Seedlings from these nurseries are sold at a subsidized rate to the public. The second major activity is the sale of commercial timber to a sawmill operation in northern Botswana.

The Government of Botswana is expanding the nursery system with support from U.S.AID. Also, through the Matsheny Village Development Plan, the Government is initiating a resource management program which includes natural woodlot management and the establishment of village woodlots. The Ministry of Agriculture has requested a Peace Corps Volunteer to work in this program. The Ministry also provides assistance in developing and managing small village woodlots. These woodlots are begun by the village development committees who in turn are often supported by the brigades system.

The Forestry Department uses the extension services of the Agricultural Demonstrators. However, because the ADs are responsible for many services and are often poorly supported, forestry extension is not conducted as extensively as it could be. Village level forestry or conservation efforts could utilize these extension workers in a positive manner but organizational factors must be addressed before an efficient operation can develop.

D. Host Country Department of Forestry Past/Current Experience in Forestry Projects with Peace Corps and AID

As stated above, the Ministry of Agriculture has requested a Peace Corps Volunteer to work in the Matsheny Village Development Plan. The volunteer's efforts would be concentrated in the natural woodlot management and village woodlot scheme. The Ministry has offered material support and transportation for the volunteer.

Formal counterparts for the volunteer may not be available due to manpower ceilings in the Botswana Civil Service. The Forestry Department will accept a skill-trained forestry volunteer.

The Department of Forestry is presently working with USAID on several projects; an afforestation program and woodlot development efforts. These are described at greater length in Appendix C.

E. Host Country Forestry Department Past/Current Experience with Private Volunteer Organizations and Other International Donors

There has been little interaction in the past because the Forestry Department is just now re-emerging as a governmental agency.

II. PEACE CORPS INTEREST/EXPERIENCE

A. Personnel Resources

Peace Corps Botswana(PC/B) currently has no one on their staff that has a background in forestry. PC/B has little experience in placing volunteers in forestry or other resource management areas because of the past focus of its programs. Phalatse Tswahong, PC staff, has an agriculture background in Botswana through the operation of his own farm and is valuable for his knowledge of overall natural resource practices and use in Botswana.

B. Material Resources

Peace Corps Botswana has few material resources for PCVs in forestry projects because there has been limited activity in this sector in the past.

C. Peace Corps Experience in Forestry/Natural Resource Projects

Currently, PC/B is trying to recruit a volunteer for the Matsheny Project discussed in the preceding section.

Technical programming support would be desirable if Peace Corps Botswana does expand its program in the natural resource area. The assistance would be needed for early input into initial program design.

D. Peace Corps Relationship with Host Country Ministries and with AID/Botswana

Peace Corps' relationship with both parties is cordial. Relations with the Ministry of Agriculture are not well developed because PC/B has not been involved in agricultural projects in the past. Peace Corps and AID/Botswana have had discussions concerning forestry efforts in Botswana. The assessment team perceived that Peace Corps Botswana has not been involved in initial project design plans or in formulating the role of Peace Corps Volunteers in projects that could potentially utilize both Peace Corps and AID resources.

III. AID/BOTSWANA INTEREST/EXPERIENCE

A. AID Resources

AID/Botswana(AID/B) has one staff person, Helen Gunther, working with forestry projects. Ms. Gunther does not have a forestry background. Recently, a consulting firm reviewed AID/B's forestry efforts. The consultants report is in Appendix C.

B. AID Experience in Forestry/Natural Resource Projects

AID/B is involved in a variety of projects dealing with natural resources. Currently, AID/B is funding an afforestation program through the Agricultural Production and Income Project. AID/B is also involved in the Arable Lands Development

Program(ALDEP) which is part of the Botswana Government effort to become selfsufficient in grain crops. A proposal has been submitted to AID/B to fund the Wildlife Management Development Project. This project would address the needs of the rural poor through improved utilization and management of wildlife resources. Appendix D provides more information on this proposal. In addition to the above activities, AID/B has provided assistance in establishing improved range monitoring capabilities in the Ministry of Agriculture and in funding training for Batswana in a variety of fields.

C. AID/Botswana Relationship with Peace Corps

AID/B has a good understanding of Peace Corps' development philosophy, partially due to the fact that the AID/B Assistant Mission Director, John Peilemeier, is a former PCV. One issue that exists between the two parties is how to involve Peace Corps in the initial planning phases of a project that may utilize PCVs. There does not appear to be any opposition on the part of either PC/B or AID/B in working on collaborative forestry projects but both have concerns regarding the administrative issues involved in such an undertaking.

IV. TRAINING

A. Peace Corps Volunteer Training

Skill-trained forestry volunteers were acceptable to all parties interviewed by the assessment team. However, the Peace Corps Director felt that problems could arise when requesting position approval from the Botswana Government.

B. PCV Counterpart Training

Peace Corps/Botswana has not been involved in forestry projects in the past and consequently does not have a history of counterparts in this field. The Botswana brigades have been the most active Botswana organization involved in forestry work and the brigades have had counterparts from the local villages. In several villages, former counterparts are currently managing nurseries and woodlots. Thus, the concept of counterparts and the benefits to be derived from them is recognized in Botswana.

The Forestry Department is in favor of including PCV counterparts in both the pre-service and in-service technical forestry training sessions. However, the Department staff feel that the training must be designed to fit the needs of the specific project that both PCVs and counterparts will eventually work on.

Training facilities are available in Botswana at the Botswana Agricultural College and at the Rural Training Centers.

V. FORESTRY PROJECT PROGRAMMING

The Matsheny Project appears to be the only forestry related project with clearly defined goals and objectives. Hopefully, this project will set an example for other forestry/natural resource efforts in the future. The new Forestry Officer in the Ministry of Agriculture will help strengthen project planning and his presence should facilitate coordinating forestry work undertaken by the brigades.

The Ministry of Commerce and Industry, which includes the Wildlife Department, has a clear vision of its goals and has an approved project proposal with AID/B. Joachim B. Schwach, Senior Planning Officer for the Ministry of Commerce and Industry, expressed interest in Peace Corps involvement as rural industrial officers. He further indicated that his office would welcome major Peace Corps involvement in planning volunteer assignments and was particularly interested in PCV counterpart training.

Further discussions between Peace Corps/B and AID/B would clarify each parties committment to natural resource projects and more clearly define their financial and personnel resources. AID/B may have more flexiibility in becoming involved in natural reource projects because Peace Corps/B may need to reduce the number of PCVs working in other programs in order to expand efforts in natural resources. Setting preliminary parameters for these changes would be necessary before any joint planning between AID/B and Peace Corps/B could be carried out.

APPENDICES

APPENDIX A

ITINERARY

10 March, 1981

Dick Mullaney, Peace Corps/Botswana

11 March, 1981

John Pielemeier, AID/Botswana Deputy Director

Helen Gunther, AID/Botswana

Andrew Quarmy, Community Service Scheme

Wim Janssen, BRIDEC

12 March, 1981

Guy Hartdyke, Forestry Officer, Ministry of Agriculture

Ralph Nickerson, KRDA Forestry projects

13 March, 1981

Horace G. Dawson, JR., US Ambassador to Botswana

Kayne Brigades Development Trust

14 March, 1981

Peace Corps Volunteers at Maun

 Matt Wunder, (Wildlife)

 John Rockhold, (Council Planning Officer)

16 March, 1981

Robin Wild, Mahalapye Development Trust

Martin Whiteside, Coordinator, Mahalapye Development Trust

 Shoshong Project

Rick Garcia, Palapye Brigade Center, MCC Volunteer

Jim Hope, Former PCV in Botswana

17 March, 1981

Serowe Brigades Development Trust Nursery & Woodlot Projects

Kim Kerston, PCV

Ministry of Agriculture Forestry Staff

18 March, 1981

Jim Hope, Tabala Project

19 March, 1981

Closing Discussions

Depart Gabarone

APPENDIX B

ASSESSMENT TEAM

ISSUES TO BE DISCUSSED WITH PEACE CORPS, AID AND HOST COUNTRY MINISTRY STAFF

The following topics should be discussed with Peace Corps staff and volunteers, AID mission staff and host country Ministry staff. The discussion of the topics should follow the outline as closely as possible in order to obtain comparable data from each country. All information obtained should be cross referred as much as possible from other sources for an objective viewpoint.

1. Host Country Ministry Commitment/Experience

A. Host Country governments' priorities in development programs.

1. What has been host country governments' development priorities in the past 3 - 5 years: Forestry/Natural resources, Education Health, etc.?
2. What types of programs (Education, Health, Water) has host country government most actively pursued from donor agencies in the last 3 - 5 years?
3. What are the current developmental priorities of host country's government? Give examples.
4. What are projected needs as perceived by host country ministry?
5. What are the projected developmental priorities for the host country government in the near future (1 - 3 years)? Give examples.....To what extent are donor agencies involved in accomplishing these priorities?
6. If answer to 5 is different than 1 or 2, why?

B. Forestry Department or Other Government Supported Forestry Efforts

1. What is the institutional structure of the Department of Forestry? (Include an organizational chart)
2. What type of support does the Forestry Department receive from the parent ministry and the host country government in general?
3. What are the staff/material resources of the current Forestry Department?
 - o budget
 - o education of employees
 - o training of employees
 - o forestry schools in country
 - o research capabilities/current research activities (involving whom, what is major thrust of research)
 - o staff stability
 - o audio-visual, technical files/library, forestry equipment
4. What types of Forestry programs and projects has the Department of Forestry focused on in the past 3 years? Currently involved in? anticipate (next 3 - 5 years). Where are these located? List examples, i.e., village woodlots, watershed management.

5. How is the forestry Department perceived by the general public? i.e., tax collector, enforcement officer, public servant?
 6. Future plans.
- C. Host Country Department of Forestry past/current experience in forestry projects with PC or AID (Separate responses for each agency).
1. What type of Forestry programs/projects has this arrangement usually entailed? Examples
 2. Is there a geographical focus/distribution of these projects?
 3. What segment of society (ethnic, social, sex) have these programs/projects benefited the most? Is this going to change to any degree?
 4. What type of support has the HCM provided PCVs in these projects?
 - o material
 - o labor
 - o office space/support
 - o technical support (use of labs
 - o dollars - transportation
 - o training
 5. What is host country Department of Forestry attitude and actual resource capability toward providing counterparts for PCVs?
 6. Have PCV counterparts been used? Seldom, usually, almost always?
 7. What is the institutional level of the PCVs' counterpart?
 8. What type of qualifications does the Department of Forestry require of its PCV counterpart?
- D. Host country Department of Forestry past/current experience with Private voluntary organizations and other international donor agencies.
1. What are the organizations and key personnel that have been involved? (past 3 years)
 2. What type of programs/projects have taken place/are taking place?
 3. What are future expectations for programs/projects (within 5 years)?

11. Peace Corps Interest/Experience

A. *Personnel* Resources-

1. Are there currently staff members involved in forestry and/or related projects?
2. If so, what are *their* backgrounds and terms of service?
3. What plans exist for replacing them?
4. If there currently are no such staff members, what, if any, plans exist for responsibility for a forestry project?
5. What are the names and numbers of volunteers, by project, their completion of service dates and replacement plans.

B. Material Resources

1. What type of project material support is available to volunteers from Peace Corps?
2. What type of audio-visual , technical files, library, support is easily accessible to PCVs from the Peace Corps office?

C. Peace Corps experience in Forestry/Natural Resources projects.

1. What types of forestry projects has Peace Corps been involved in in the last 3 years? Examples.
2. What are the current projects Peace Corps is involved in?
e.g.,
 - o are they progressing as planned? If not, what changes have been necessary?
 - o how many volunteers are involved in these projects?
 - o what degree of counterpart participation exists?
 - o what level of technical support do the PCVs/counterparts receive from PC/TCM?
3. Is there a geographical focus to PC forestry projects? If so why?
4. To what degree does PC in-country see itself capable of programming/support for new project development or expansion of old projects?
5. What constraints do they see; what PC/Washington support will they need?

D. Peace Corps experience in collaborative projects, of any kind, with AID.

1. Within the last 3 years, what type of programs/projects have been developed jointly by PC and AID?

2. Who has initiated this activity and at what level (central, regional, local).
3. What degree of involvement (money, labor, material) has existed from both parties?
4. What segment of society has benefitted most from these activities?
5. What is Peace Corps general perception about this type of activity?

E. Peace Corps Relationship with Host Country Ministry and AID?

1. What has been Peace Corps relationship with host country ministry and AID in general?
2. Are there foreseeable changes in this relationship due to changes in budget, staff, or program priorities by any entity?
3. Are there specific issues in common/different?

F. Peace Corps relationship with PVOs, NGOs, and other donor agencies

1. What is Peace Corps current relationship and past experience with PVOs, NGOs, and other donor agencies - key personnel.
2. Has Peace Corps been able to effectively utilize PVOs NGOs, and other donor agency personnel/material resources?
3. What is future potential for material/technical support from these agencies?

111. AID Interest/Experience

A. Staff Resources

1. Does AID currently have staff dealing with forestry?
2. If so, what is their background and terms of service?
3. What if any replacement plans, or, adding forestry related staff exist?

B. Technical Resources

1. What technical resources (i.e., libraries, connections with research organizations, private consultant resources) does AID have that could assist PASA related activities?

2. Who has or does not have access to these technical resources?

C. AID experience in Forestry/Natural Resources projects

1. What types of Forestry/Natural Resources related programs/projects has AID been involved in in the last 3 years?

- o degree of involvement
 - money
 - labor
 - material
- o principle beneficiaries in society
- o most important outcome

2. What type of Forestry/Natural resources related programs/projects is AID currently involved in

- o degree of involvement
 - money
 - labor
 - material
- o principle beneficiaries in society
- o anticipated outcomes

3. Is there a general philosophical orientation of these programs/projects.

4. Is there a common development strategy to these programs/projects? e.g., Institution building. Give examples.

5. Who is primarily undertaking program/project activities? Give Examples.

6. What is AID's philosophical orientation toward the use of counterparts?

7. Is this orientation reflected in the actual projects?

8. With what priority does AID view future/expanded efforts in the forestry area? How is that commitment evidenced?

9. Is there a geographical focus to AID activities?

D. AID experience in collaborative projects, of any kind, with PC, PVOs, and NGOs.

1. What types of programs/projects have taken place?

2. What organization initiated this collaborative effort and at what level, (i.e., central, regional, mission)

3. What was the degree of involvement by each participating organization? (i.e., money, labor, material)

4. What were/are the outcomes of these activities?

- o primary beneficiaries in society

5. What is AID general perception of this type of activity?

E. AID relationship with HCM and Peace Corps

1. What has been AID relationship with PC and HCM in general?
 - o assess AID's attitude and understanding of 3 goals of Peace Corps
2. Are there foreseeable changes in this relationship due to changes in budget, staff, or program priorities by any entity?
3. Are there specific issues in common/disagreement?

F. AID relationship with PVOs

1. What is AID's current relationship and past experience with PVO, NGO and other donor agencies?
2. What type of contributions have existed in these efforts? i.e., key personnel, material, dollars, technical resources.

IV. Training

A. Peace Corps Volunteer Training

1. What is the attitude of PC, HCM, and AID staff toward skill trained volunteers in Forestry/Natural Resources programs/projects.
2. Have PC, HCM, and AID worked with trained volunteers? If yes, what type of project, if no, why not?
3. If Peace Corps has used skill-trained volunteers in any sector, where has the skill-training taken place? (i.e., SST or in-country)
4. What suggestions do PC staff and volunteer, HCM and AID have for pre-service and in-service PCV training (especially skill training) for forestry programs/projects; i.e., skill areas.
5. What type of in-service forestry training could be provided for PCVs currently working in other programs?

B. PCV counterpart training

1. What degree of involvement do counterparts have in current or projected PC, AID, or other PVO or donor agency forestry projects?
2. What is the attitude of PC, HCM and AID toward PCV counterpart

involvement in PCV pre-service and in-service training?

3. What are each entities principle concerns about this issue, such as financial, support, technical material presented, language, travel, time away from work, etc.,.
4. Are there appropriate training facilities, either Peace Corps, AID, HCM, or private, in-country or within the geographical region (i.e., Turalba)

V. Forestry project Programming

1. What are the tentative forestry programming issues that PC, HCM, and AID perceive as needing to be addressed before an actual new or expanded project could be implemented?
2. Which entities need to adress which of these issues?
3. What further info do each of these entities feel they need from Peace Corps/Washington, in order to determine the feasibility of further participation in the PASA?

APPENDIX C

FIRST ANNUAL EVALUATION
OF THE
RURAL SECTOR GRANT

Christopher Dunford
George Honadle
Timothy Krohn
Marcia L. Odell
Roger J. Poulin

Development Alternatives Inc.
1823 Jefferson Place, N.W.
Washington, D.C. 20036

TABLE OF CONTENTS

ACKNOWLEDGMENTS

PART I - OVERALL REVIEW

- A. Summary Assessment of First Year Activities
- B. Summary Assessment of Second Year Proposals
- C. Management and Monitoring
- D. Future Requirements

PART II - REVIEW OF INDIVIDUAL PROJECTS

A. Year 1 Activities

- LG 30 - Implementation of Land Use Plans
- LG 36 - Development of Land Institutions
 - Water Points Survey
- AE 11 - Horticulture Development
- AE 15 - Afforestation
- AE 19 - ALDEP Pilots
- CI 08 - Rural Industries Promotion
- GA 02 - Wildlife Utilization

B. Year 2 Activities

- LG 31 - Implementation of Land Use Plans
- LG 36 - Development of Land Institutions
- AE 10 - Small Projects Fund
- AE 11 - Horticulture Development
- AE 15 - Afforestation
- AE 19 - ALDEP Pilots
- CI 08 - Rural Industries Promotion
- GA 02 - Wildlife Utilization

APPENDIX: The Administrative Context of the Rural Sector Grant

AE 11 - HORTICULTURE, 1980/81

	Amount budgeted in orig. PM	Amount Warranted as of 12/31/80	Expend. as of 12/31/80	Expected Expend. as of 4/1/81	Expected balance as of 4/1/81
Vehicle	8 815				8 815
Tools & equipment	7 971				7 971
Horticulture supplies	3 800				3 800
Transport and maintenance	3 600				3 600
House construction	18 000				18 000
Site development	48 319				48 319
Contingency	9 050				9 050
	<u>99 555</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>99 555</u>

GROUP II: AGRICULTURAL PRODUCTION AND INCOME

Year 1

AE 15 - Afforestation

DESCRIPTION

The objectives of the afforestation program are to:

- 1) provide individuals, village groups, and government agencies with tree seedlings for afforestation and amenity planting, and
- 2) financially and technically assist village groups and government agencies in the establishment of village woodlots for the purpose of providing firewood, posts, and hut construction materials for local use.

The afforestation program is divided into AE 15 (I) expansion and establishment of Government tree nurseries and, AE 15 (II) small afforestation projects program (woodlots).

The Ministry of Agriculture (MOA) currently operates six nurseries. A seventh nursery built with RSC funds is close to completion at Kamatlatama. Two more nurseries are planned in the coming two years. In addition, two village woodlots (in Matsheng and Jakatokeame) were to have been constructed in 1980/81 and funds were tentatively set aside for additional woodlots in the second and third years of the RSC. At least six village groups in different locations are establishing or managing woodlot projects. Plans have been submitted to MOA for establishing nine woodlots between 1980 and 1982. Total RSC support for this project is currently budgeted at about

P270 000 for the three year period of the grant. The GOB contribution to this project in Year 1 is limited to the payment of local salaries at the Ramatlabama nursery.

PROJECT PERFORMANCE

Achievements

Nursery construction is staggered over a three year period. The Ramatlabama nursery will be completed in the 1980/81 GOB fiscal year. Two more nurseries are planned for the fiscal years 1981/82 and 1982/83. One small woodlot (.5 ha) was planted in Mahalapye. Two other woodlots that were to have been started in 1980/81 (in Matsheng and Takatokwane) have been postponed to 1981/82.

Implementation Problems

There were no implementation problems in the nursery construction at Ramatlabama.

Originally, woodlots at Takatokwane and Matsheng were to have been established in 1980/81. However, because MOA did not subvarrant the funds for Takatokwane until December 1980 and Matsheng lacks a project manager, neither woodlot was established. The site at Takatokwane has been prepared for planting using GOB funds. It will lie idle until the rains begin in November or December 1981, at which time planting will take place. A proposal for a village woodlot in Mahalapye was received and financed by the RSC using funds originally budgeted for contingencies under the Ramatlabama nursery. The cost of the Mahalapye woodlot was P615.

Financial Situation

In year one, P29 240 was budgeted for the Ramatlabama nursery construction, of which P25 989 will be spent by 1/4/81. Of the P28 888 budgeted for the Takatokwane and Matsheng woodlots, none was spent as of 1/4/81. The entire unspent balance will be carried over into Year 2.

Monitoring Arrangements

The nursery financial flows are controlled by the Ministry of Finance accounting procedures. Beginning with the arrival of the Forestry Officer in June 1980, each nursery began monitoring the outflow of seedlings. Monthly reports of plant sales are sent from each nursery to the head office. Amenity and plantation seedlings are kept separate as raw data but not in the monthly reports. Since the factors affecting demand for each type of seedling are very different, separate sets of data should be kept for each one.

No standardized monitoring procedures exist for the village woodlots program. With the small number of woodlots currently being established or expanded the forestry staff can easily monitor these activities. If there is significant growth in the village woodlot program, however, a standardized monitoring system will be required. Monitoring should cover: an inspection of the fencing, a reliable area estimate, a spacing observation, and a check for signs of maintenance. These activities when compared against standardized activity and cost guidelines will be easy to verify. MOA foresters could perform this function as part of their regular field trips.

ANALYSIS

The nursery people are managing and operating the nurseries in a manner consistent with typical nursery practices in the Southern Africa region. They are somewhat overstaffed and inefficient in their activities, but they produce healthy seedlings.

The location of the Ramatlabama nursery is a poor choice. Prior to the construction of the Ramatlabama nursery there were two nurseries within easy driving distance of Ramatlabama; these being Gaborone and Kanye. The woodlots, of the size being currently established, use on the order of 5,000 to 10,000 seedlings for each planting season. This quantity can easily be transported to the woodlots by pickup truck. The Ramatlabama nursery lies within sight of the South African border in the southeast corner of Botswana, which means that its distribution area is only one-third of a circle, if one can make the assumption that a normal distribution area radiates 360 degrees from a focal point. Thus far, the main user of seedlings from Ramatlabama is the Good Hope plantation which could easily have obtained its seedlings from Kanye.

The design of the Ramatlabama nursery appears to be excessively expensive. First, a nursery needs a tractor and implements only for soil loosening prior to hauling to the nursery. The great majority of tractor and implement use in forestry programs is for plantation or woodlot use. In fact this is how the tractor that was provided for the Ramatlabama nursery is currently being used. The allocation of tractors and implements should be shifted to activities other than nurseries to reflect actual use patterns. Second, a vermin-proof shed can be justified for tool storage, office, and other use; but not a P10 000 store/office. The level of activity at a nursery the size of Ramatlabama does not justify buildings of that size.

The only other Year 1 activity under this project is the Mahalapye woodlot. The woodlot is a .5 hectare demonstration plot near the edge of Mahalapye. It is being established as part of the literacy school run by the Mahalapye Brigade and its purpose is to demonstrate woodlot design and management for village groups in the area. The management of the woodlot is following the standard Botswana practices: fencing, plowing, planting, weeding, and watering. There are no technical or institutional issues related to this activity.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

1. The nursery construction was completed on schedule. Under the woodlot component the Mahalapye woodlot was established during 1980/81. The Takatokwane trials woodlot was postponed by one year due to late arrival of funds and the Matsheing project has been postponed until a manager can be identified.
2. It appears that the site for the first nursery under the RSC was not well selected. Any prospective users of seedlings from Ramatlabama could easily have been supplied from at least two other nurseries in southeastern Botswana.
3. The design of the Ramatlabama nursery appears excessively expensive relative to likely volume of sales. It is recommended that future MOA nursery projects not include funds for tractors or for

any building other than a vermin-proof shed for storage of tools and supplies, unless the tractor and/or buildings can be justified for uses other than those related directly to the nursery. This issue is discussed further in the review of Year 2 forestry activities.

4. The monitoring of the nursery program is satisfactory now that records are being kept on the outflow of seedlings. Similarly, as long as the number of woodlot projects remains small, the monitoring is adequate. However, if the village woodlot program increases significantly a standardized and regular reporting system will be required.

AE 15 - AFFORESTATION, 1980/81

	Amount budgeted in orig. PM	Amount varranted as of 12/31/80	Expend. as of 12/31/80	Expected Expend. as of 4/1/81	Expected balance as of 4/1/81
1. Ramatlahama nursery	29 340	30 000	11 524	25 989	3 351
- tractor & imple.	(11 330)	(11 330)	(9 980)	(11 330)	-
- office & equip.	(14 170)	(14 170)	(47)	(12 659)	(1 511)
- hand tools	(1 173)	(2 000)	(1 173)	(1 173)	-
- contingency	(2 667)	(2 500)	(324)	(827)	(1 040)
2. Matsheng woodlot	(19 088)	-	-	-	(19 088)
- materials	(11 703)				
- labor	(4 133)				
- tractor hire	(2 210)				
- contingency	(1 042)				
3. Takatokwane	9 800	10 000			9 800
- fencing	(3 894)	(3 894)			
- labor	(2 436)	(3 436)			
- trees	(1 625)	(1 625)			
- contingencies	(1 845)	(2 045)			
4. Mahalapye woodlot	-	-	-	615	- 615
	58 228	40 000	11 524	26 604	31 624

GROUP II: AGRICULTURAL PRODUCTION AND INCOMEAE 15 - AfforestationDESCRIPTION:

Government nurseries in Serowe and Kasane were originally proposed for construction in 1981/82 under this project. The Serowe nursery is now being replaced with a nursery at Kang, since there is already a small brigade nursery at Serowe and a nursery at Kang will improve the geographic distribution of nurseries in Botswana. The nursery at Kasane has been postponed to Year 3 of the RSG.

In addition to the Matsheng woodlot and the Takatokwane sandveld trials which were postponed from Year 1 to Year 2 of the RSG (see the review of Year 1 for details) it is proposed that P50 000 be allocated for small village woodlots in Year 2. Project Memoranda have been received for three new woodlot projects, at Mochudi, Palapye, and Kang. The Mochudi project consists of planting six, eight, and ten hectares over a three-year period. The Mochudi Farmers' Brigade will act as contractor for village groups in the design and establishment of the woodlots. These woodlots will be aimed at soil conservation as well as production of firewood, roofing poles and fence posts. Although the brigade is prepared to assist with projects anywhere in Kgatleng District it is expected that most of the woodlots will be in the Mochudi area.

The Kang woodlot will be established and managed by the Matshe Brigades Development Trust. A five hectare area three kilometers from Kang has been petitioned of the Kgalagadi Land Board for the site of this woodlot. The objectives of this woodlot will be to: provide building poles and firewood to Kang village, study the suitability of various species in the Kgalagadi environment and gain experience with the operation of village woodlots in the sandveld area of Kgalagadi District.

The Palapye project will be a demonstration of the use of windbreaks, shelterbelts, woodlots, and fruit tree orchards. The project will be located on the Palapye Dryland Crop Demonstration Farm. The brigade operates on the philosophy of implementing demonstration projects with equipment available to the average farmer, these being donkey and cattle-driven implements. This project will be established using these implements.

The three new woodlots projects will cost about P24 000, leaving P26 000 for additional woodlot proposals in Year 2.

FUNDING REQUIREMENTS

Funding requirements for the Kang nursery in Year 2 are estimated at P29 164 of which P3 351 is carried over from Year 1. The budget for woodlots in Matsheng and Takatokwane are P13 851 and P12 485 respectively. This represents an increase in total requirements of P3 343 over what is being brought forward from Year 1. The entire increase is due to inflation. Of the P50 000 budgeted for village woodlots in Year 2, the following projects have been approved: Palapye, P5 928, Kang P11 010 and Mochudi P7 140. There remains P25 922 available to other woodlots when their proposals are received.

FEASIBILITY AND DESIGN ISSUES

Forestry programs in Botswana face serious constraints stemming from the climate, domestic animal grazing, and traditional wood utilization practices. The demand for wood is varied. Areas surrounding the cities and major villages have a major need for firewood and materials for hut construction. In more remote areas, demand for wood products is low and supply is relatively plentiful, especially for firewood. Also, surrounding the major village areas overgrazing has allowed thorn bush to become the predominant vegetation. With this constant grazing pressure any woodlot must be fenced, which is expensive.

Two systems of woodlots exist based on indigenous and exotic species. Several studies indicate that fifteen to 45 hectares of indigenous woodlots will produce the same quantity of wood as one hectare of exotic plantation. For many uses the choice is between the implementation problems related to managing large areas of indigenous species on the one hand and the large capital investments necessary for exotic woodlot plantations on the other. Comparisons of costs and benefits should be made before initiating a national program based on exotic species.

The trees grown in plantations are mostly Eucalyptus camaldulensis, a species very adaptable to arid climates. A few other species are also being planted, such as E. tereticornis and E. grandis/saligna. However, tree planting currently does not adequately take into consideration genetic variability, indigenous species, and site-species interactions.

A large variation in tree vigor, size and shape is readily seen in the various plantations in Botswana. Part of the reason for this is that E. camaldulensis has a large genetic variation and that the Botswana tree planters indiscriminately plant all the seedlings they receive. There are no selective seed collections programs in Botswana and no culling of poor seedlings. The Takatokwane and Good Hope plantations will be establishing the only species and provenance trials in the country.^{1/} More should be planned as better trees come into maturity in the existing plantations. Also, indigenous species should be given more attention in the forestry program. They are preferred by the people of Botswana, have higher caloric value, higher rot resistance, and higher termites resistance than E. camaldulensis, E. tereticornis, or E. grandis/saligna.

Finally, site and species interactions need fine tuning. E. camaldulensis will do best when it is planted in a water catchment area or where there is a relatively high water table. The KRDA stands near Molepolole are outside of catchment areas and show stress conditions on a substantial number of trees. The crowns are thin and the leaves are pale green instead of a healthy dark green. The KRDA stand near Kopong, on the other hand, is close to a stream and shows full crowns and healthy leaves. In both locations some trees had grown to a respectable height and diameter. Seed from these trees should be collected for further selection processes.

INSTITUTIONAL ISSUES

The Lack of a Policy Framework

The GOB does not currently have a forestry policy that is useful for planning purposes. The existing policy statement describes the objectives

^{1/} Provenance trials are field plantings of one or more species using seed from several known genetic sources.

of the forestry program but provides no indication of the relative seriousness of the different problems being addressed, relative priorities of the different objectives and clear strategies based on a thorough analysis of the constraints to increased production.

The first step in setting a useful forestry policy for Botswana is a supply and demand-analysis. Botswana's needs for forest products both at the national and regional level need to be identified. This demand should then be related to the production potential of the country by region and by type of product. Given the semi-arid conditions in this country it is clear that some forest products will never be able to be produced domestically. Those factors should be well understood before undertaking large-scale commercial woodlot programs. Some Brigades which have strongly committed themselves to commercial plantations have requested Government support in marketing when they should have requested assistance in economic feasibility analysis before making the commitment.

Another phase of this policy formulation process is the identification of goals other than production to be sought by a forestry program. These are primarily related to soil conservation and amenities. Here again the magnitude of the needs must be identified. Stating that a forestry objective is reforestation of areas critically denuded of vegetation is not useful and can be misleading, since Botswana has very few such areas. In fact, most forestry projects in Botswana require the clearing of existing vegetation before planting.

Once the needs and production possibilities are established there should be an analysis of all of the constraints to increased production: technical, economic, social and institutional. It is this stage which provides the basis for a strategy that includes the clear objectives, priorities and time frames that are required for sound project design and resource allocation.

The Project Approval Process

Approval procedures for forestry projects are unnecessarily cumbersome and time consuming. The required documentation is non-standardized resulting in unclear statements of objectives and description of activities, and inaccurate estimates. In addition to requiring that the GOB Project Memorandum format be closely adhered to, the MOA should standardize costs as much as possible. To establish a woodlot there are certain steps which must be taken. These include: site preparation, fencing, weeding, watering, planting, harvesting and transportation. It is also possible to define the inputs required for each activity. For example, site preparation in Botswana usually consists of land clearing, destumping and ploughing. A set of guidelines should be produced by the Forestry Section stating what activities will receive assistance, what the maximum amount of assistance will be and what type of voluntary inputs are needed. The following is an illustrative list of standardized costs for activities related to established woodlots:

<u>Activity</u>	<u>Government Support</u>
Site preparation	P 250/ha
Fencing	1 000/km
Planting	500/1 000 seedlings
Watering	100/ha/yr
Weeding	100/ha/yr

The group receiving the assistance would make a self-help contribution probably in the form of labor and would cover any costs incurred above the standards established by Government. The amounts should be reviewed annually and revised to reflect changing conditions. The above is an example and should be modified to fit Botswana conditions.

Some of the proposals received for Year 2 of the RSG request funding for land rental and land application fees. These costs should be part of the local contribution. A second issue relating to the village woodlot proposals is why storage sheds are needed. The hand tools and supplies could just as easily be stored at a villager's home or in a group's shed. Finally, there appears to be little justification for financing pipe and flexible hose for watering at Matsheng and a 4,500 liter storage tank at Kang instead of a donkey cart and 55 gallon drums. These issues could be addressed much more easily in the approval process if woodlot design were standardized.

Monitoring

There is currently no system for the regular monitoring of the woodlot program. This would not be a serious problem if there were a forestry field staff well distributed throughout the country. However, in the absence of field staff it will be necessary to set up a system of reporting and field visits using what staff is available at the Central Forestry Office with assistance from MOA field personnel. Financial monitoring for brigade activities can be handled through the Brigade Development Center. The monitoring of funds for other projects will rely on the MOA system of financial control. The MOA should assure itself that it is able to monitor the flow of funds under a village woodlot program effectively.

Manpower Requirements

The ongoing MOA forestry program, consisting of nurseries and government plantations, combined with proposals for new projects under the second year of the RSG imply the following manpower requirements:

- 1) management and labor for MOA nurseries and plantations,
- 2) staff to perform extension services for village groups and
- 3) staff for monitoring of afforestation activities particularly village woodlots.

Of these requirements, the first is easiest to assess. In general, nurseries are overstaffed in terms of labor but lacking in qualified management. Seedlings are being produced but seed selection and culling of seedlings are not occurring in a systematic way. Given the shortages of qualified management throughout MOA and the ministry's own priorities, it is unlikely that this situation can be rectified in the near future.

The MOA has implicitly made a decision not to become involved in forestry extension to any significant degree. Here again, the obvious reason is manpower shortages. This means that whatever extension services will be required by groups establishing woodlots will have to be provided from sources other than MOA staff. The most important of these sources are the brigades, several of which have ongoing forestry programs of their own.

Most have indicated the desire to work with groups in the actual construction of woodlots as well as provide technical assistance for woodlot design and management. Where forestry brigades exist, they have the capacity to perform these functions satisfactorily. Thus, extension advice is available in areas around Serove, Mochudi and Molepolole and perhaps other small areas (e.g. Palapye and Kang) as well. One promising possibility for supplementing the brigades in performing extension work is to recruit forestry volunteers (e.g. Peace Corps) and assign them to areas where there appears to be significant demand for woodlots but little or no extension capacity. During the course of the next year the Forestry Section of MOA should assess extension needs and provide a report as part of its request for village woodlot funding for Year 3 of the RSG.

Similarly, for monitoring the MOA will need to set up a system of regular reporting and field trips and assess whether its available manpower can perform this task adequately. This issue shall also be assessed by the RSG evaluation team during the review of Year 2 activities and Year 3 proposals.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

1. The evaluation team concurs with the decision to establish a nursery at Kang instead of Serove. The proposed nursery at Kasane, which is now scheduled for Year 3, is justified only if the existing nursery at Kachikau is scaled down to a small holding nursery and the staff at Kachikau is reduced accordingly. Also, as noted in the review of first year activities, the funding of tractors and office buildings should not be approved unless they can be justified for activities other than those related directly to nurseries. A PM amendment covering: 1) the moving of one nursery to Kang, 2) plans for the Kachikau nursery and 3) justification for tractors and offices at both nurseries is needed.
2. A standardized project approval system including guidelines for approval of proposals is needed for the Small Woodlots Fund. A suggested set of guidelines is attached. The three woodlot proposals already received meet these guidelines so it is recommended that they be approved for RSG funding. Approval of future proposals, however, should be based on established guidelines. These can be provided to the RDU and USAID either as part of the PM addendum required for the nurseries, or as a separate document.
3. It appears that the brigades can provide much of the extension services required by the small woodlots program and needs not covered by the brigades could be met through expatriate volunteers. However, manpower requirements for extension and monitoring related to small woodlots should be assessed by the MOA and a report submitted as part of the Forestry Section proposal for funding in Year 3 of the RSG. One immediate requirement that will not be met through brigades is for an advisor/manager for the Matsieng woodlot. Consideration should be given to recruiting a volunteer for that position at an early date.
4. The overall forestry program including government plantations, large brigade plantations/woodlots and small village woodlots suffers from the lack of a clear overall policy. The formulation of such a policy requires studies and analysis of needs, production

potential and constraints. These studies should be undertaken as soon as possible with assistance from outside experts.

5. As part of an ongoing program of research and analysis, the following actions are recommended:
 - a. Species and provenance trials should be incorporated into village woodlots whenever possible. The Forestry Officer should approve the design of these trials as well as the seed source selection. He should monitor the trials about every six months and publish his findings as and when appropriate.
 - b. An economic feasibility and marketing study of government and KRDA plantations should be carried out before any further expansion is undertaken.
 - c. Economic studies of firewood, post, and pole fiber production and of indigenous woodlands and exotic plantations under managed and unmanaged conditions should be undertaken.

FUTURE ACTIONS REQUIRED

1. The MOA is required to prepare a PM addendum which includes:
 - a. a discussion of the relocation of the second nursery from Serove to Kang and of plans for the Kachikau nursery in connection with the new nursery proposed for Kasane in Year 3;
 - b. justification for the financing of tractors and offices at both nurseries; and
 - c. revised budgets for the nursery component of AE 15.
The PM addendum must be approved by MCDP and USAID prior to April 30, 1981 as a precondition to disbursement of funds for nurseries.
2. Before any proposals for additional village woodlots are accepted for funding under the RSC, the MOA must prepare standardized guidelines for the design and approval of proposals and provide them to USAID for approval.

Suggested Guidelines for the Small Woodlot Fund

1. All proposals for woodlots should follow the COB Project Memorandum (PM) format and contain the following information:
 - a) the objectives of the woodlot,
 - b) the group that will manage the woodlot,
 - c) the organization that will build the woodlot,
 - d) type and value of contribution by the beneficiary group,
 - e) description of the woodlot:
 - location (include map),
 - size in hectares,
 - kilometers of fencing,
 - number of seedlings: total and per hectare,
 - type of site preparation:
 - i) clearing in hectares,
 - ii) destumping in number of stumps/hectare and hectares,
 - iii) plowing in hectares,
 - watering schedule in trees/hectare and hectares,
 - weeding schedule:
 - i) mechanical in hectares,
 - ii) hand in trees/hectares.
2. The maximum MOA contribution will be as follows:
 - a) P - hectare for land clearing
 - b) P - ha for 1 to 10 stumps/ha
P - ha for 11 to 25 stumps/ha
P - ha for 25+ stumps/ha
 - c) P - ha for ploughing
 - d) P - for goat-proof wire fence
P - for bush fence
P - 1000 seedlings for watering
3. Support from the Small Woodlot Fund will be limited to a maximum of ten hectares per year per woodlot
4. Fencing, tree spacing, species and other technical guidelines issued by MOA Forestry Unit will be the basis for designing each woodlot
5. The group will provide at least 10% of the value of the project in labor or in material
6. The group will not be paid for its labor contribution but the labor can be included in the required 10% self-help contribution
7. The Forestry Section will approve all applications.

AC 15 - AFFORESTATION, 1981/82 & 1982/83

	Expected balance as of 4/1/81	Planned expend. 1981/82	Additional funds required	Planned expend. 1982/83
1. Nurseries (Kang and Kasane)	3 351	29 164	25 813	30 000
- tractor and implements	-	(11 330)	(11 330)	
- office & equipment	(1 511)	(14 146)	(12 635)	
- hand tools	-	(1 173)	(1 173)	
- contingency	(. 1 840)	(2 515)	(675)	
2. Matsheng woodlot	19 088	19 851	763	
3. Takatokwane trials	9 800	12 485	2 685	
4. Small Woodlots Fund	-	50 000	50 000	100 000
	<u>32 239</u>	<u>111 500</u>	<u>79 261</u>	<u>100 000</u>

PROJECT MEMORANDUM**A. SUMMARY FIGURES**

Project Title: Wildlife Management Development

Project No: GA02

Total Estimated Cost: P814,868

Capital Cost: P70,350

Recurrent Cost (Capitalized): P744,518

Funds Requested in this memorandum: P814,868 (USAID/EDP 1980/81).

B. SYNOPSIS

The aim of this project is to increase the access of the rural poor to productive opportunities associated with the utilization of wildlife resources. It will achieve this aim by:

- (i) training individual hunters to handle raw materials correctly;
- (ii) training and equipping local professional hunters;
- (iii) promoting cottage industries for tanning and manufacturing skin products and handicrafts;
- (iv) promoting commercial harvesting and processing
- (v) providing a scientific basis for sustaining maximum offtakes by individual hunters and commercial harvesting operations.

C. PROJECT DESCRIPTION**1. Back Ground**

Botswana is about the same size as Kenya or France (570,000km²). Much of its surface is mantled with extensive deposits of Kalahari sand. It has a semi-arid climate and permanent surface water occurs only in the drainages of the Okavango and Chobe/Linyanti Rivers. The vegetation ranges from grassland and shrub/tree savannah in the drier areas, to woodland, in the wetter areas. The diverse habitats of this environment support a varied and prolific fauna. A system of National Parks and Game Reserves covering 14% of the country goes some way to ensuring the conservation of representative examples of most habitat types, but important areas and wildlife populations remain outside this system. In addition, populations that utilize protected areas often have seasonal ranges which include adjacent areas lying outside the park system.

In terms of people, the country is relatively sparsely populated, but the existing population is increasing rapidly. The traditional economic activities of pastoralism, subsistence agriculture and hunting and gathering, persist, but the modern sector of the economy is expanding rapidly. The increases in population and in economic activity, particularly expansion of the cattle industry, have resulted in deteriorating range conditions and the beginning of uncontrolled expansion into hitherto unsettled areas.

At the national level, the government has responded to these pressures with the adoption of an enlightened Tribal Grazing Lands

Policy. This policy seeks to promote an orderly expansion of the cattle industry while at the same time raising standards of range management. It also seeks to protect the rights of non-stock holders. It proposes that the pressures on existing communal grazing areas should be alleviated by opening up new areas for commercial ranching.

The first step in the implementation of this policy has been a land use planning exercise which involves the zoning of the entire country into areas suited to commercial ranching, areas for communal grazing, Wildlife Management Areas, and reserved areas, where non-pastoral activities have precedence, at least for the time being.

The survival of wildlife in the remote areas outside parks was more or less taken for granted before the introduction of this policy but it is now necessary to justify the allocation of land to wildlife conservation in terms of its economic value to non-stockholders. Within the framework of the policy wildlife utilization is recognised as a valid form of land use and areas (to be known as Wildlife Management Areas) have been set aside in which wildlife utilization will be the primary form of land use, although compatible economic activities will be tolerated.

The idea of areas in which wildlife utilization is the principal form of land use has been accepted at all levels of government, from local land boards to the Cabinet, and legislation for their creation has been enacted. The future of the idea depends on its implementation through the developments proposed in this memorandum.

The importance of these developments is that increasing competition between different forms of land use has created an urgent need to prove the economic value of wildlife. There is no doubt that many rural people already benefit substantially by using wildlife as a source of meat and skins but these benefits are usually taken for granted and are difficult to quantify.

2. Project rationale

It is both necessary and desirable that the economic returns from Botswana's wildlife resources should be maximized. An analysis of the prevailing forms of wildlife utilization indicates that there is considerable scope for increasing economic returns from wildlife. Ways of increasing benefits from wildlife are described below and an explanation is given for the necessity of monitoring wildlife resources to ensure that intensified utilization is sustainable.

(i) Returns to individual hunters could be improved by:

(a) correct handling raw meat and hides at the time of harvesting;

(b) improved marketing of dried meat and hides.

(ii) Rural people who own neither vehicles nor firearms have very limited access to the wildlife resource. This situation could be alleviated by training and equipping local professional hunters to harvest wildlife for poor people who lack the means to do this for themselves.

(iii) In the rural areas there are possibilities for creating employment related to:

(a) village tanneries;

(b) village manufacturing of skin mats, karosses etc;

(c) production of handicraft from ostrich shell, horns etc.

- (iv) A number of schemes show considerable commercial potential. These include:

- (a) cropping of zebra, wildebeest, buffalo etc and processing harvested animals in a cannery in Maun;
- (b) ostrich ranching;
- (c) export of live game;
- (d) crocodile rearing and marketing;
- (e) fur production from genets, jackals, foxes etc.

These commercial schemes would create employment in rural areas and would also generate income for local authorities which could be used for other developments.

In order to implement any of these schemes successfully feasibility assessments, cost/benefit analysis and careful planning will be indispensable. The Department of Wildlife, National Parks and Tourism does not have the manpower to undertake the necessary assessments and planning. It will therefore be necessary to use consultants for the evaluation and planning of individual schemes.

- (v) Until very recently hunting quotas in Botswana were set in an arbitrary way and no effort was made to use the country's wildlife resources efficiently. The only check on offtake levels was a system of monitoring hunting success which was designed only to detect over-utilization. This situation resulted in a substantial under-utilization of the country's wildlife resources.

The results of recent wildlife inventory projects have enabled quotas to be determined more accurately and have greatly increased the potential for wildlife utilization. If this potential is to be realized and the flow of benefits from it to be sustained it is essential that the resource be monitored. The reason for this is that present knowledge is inadequate for the purpose of predicting population trends and the effects of intensified utilization.

For this reason a monitoring program is proposed, the objectives of which will be:

- (a) determine the highest sustainable offtakes from wildlife populations;
- (b) to establish the effects on animal populations of the applied rates of harvesting;
- (c) to determine the effects on the habitat of prevailing management practises.

Although designed and tested for the most part by expatriate research works, the monitoring systems will ultimately be operated by local management personnel. An example of the development of this type of system is the Range Monitoring program in the Ministry of Agriculture.

3. Technical Description

For aerial work the wildlife biologist will require the use of the aircraft (Cessna 210) and survey equipment belonging to the Department of

Wildlife, National Parks and Tourism. For ground work he will require a Toyota Land Cruiser and camping and field autopsy equipment. He will also require photographic equipment.

The range ecologist will require a Toyota Land Cruiser for transport. He will also require camping equipment, photographic equipment, soil testing and analysis facilities and facilities for the chemical analysis of plant material.

4. Plan of Operations

The duration of the project will be three years and will involve a variety of activities which will be undertaken concurrently. Activities to be undertaken are detailed below -

(a) Pilot training scheme for individual hunters:

This scheme will be supervised and implemented by the Rural Industrial Officer (R.I.O.) Tshabong and will adopt the following procedure:

- (i) A consultant will be hired for one man month to design a short training course for local hunters, the aim of which will be to teach them the best ways of harvesting animals and of handling raw meat and skins. Two weeks will be allocated for the design and setting up of the course.
- (ii) In co-operation with the Senior Game Scout Tshabong, the R.I.O and the Consultant will hold a short workshop (1 - 2 weeks) for interested local hunters who will be trained in correct harvesting of wildlife and handling of raw materials. This course will involve field demonstrations, for which transport will be provided by the Department of Wildlife. It will also provide information on possible ways of marketing meat and hides. The R.I.O will be responsible for proper co-ordination of the consultant's visit with the conducting of the workshop.
- (iii) The R.I.O. will investigate possible markets for dried meat (Jwaneng?) and skins (BGI?) for hunters based in Tshabong.
- (iv) The R.I.O. will monitor the success of the trial purchasing arrangements.
- (v) At the close of the hunting season the R.I.O. will prepare a report on the success of the scheme.
- (vi) If the scheme is fridge to be successful, similar workshops will be held in other villages with hunters trained in the first workshop as instructors.

(b) Investigation and development of further training, harvesting and processing schemes.

Many of the proposals for improving economic returns from Wildlife require further investigation and development. In this category are included:

- (i) training and equipping of local professional hunters;
- (ii) promoting cottage industries for tanning and manufacturing skin products and handbags.

(iii) promoting commercial harvesting and processing.

For these schemes this sub-project will adopt the procedure developed in launching the Bamshok Domestication Project. The following steps:

- (a) a potential utilization scheme is identified by the management and/or Research Division/s in the Department of Wildlife;
- (b) a consultant is employed to investigate the feasibility of the scheme, consider cost/benefit aspects and advise on means of implementation;
- (c) the consultant's report is circulated to concerned local and central government authorities and their views on the project are obtained with the object of fitting the scheme within the frame work of national and district priorities;
- (d) if the consultant's report is favourable and the concerned authorities are in agreement, a Project Memorandum is produced by the joint efforts of the Department of Wildlife and the Planning Unit in the Ministry of Commerce and Industry;
- (e) The Project Memorandum is submitted to the Ministry of Finance and Development Planning either as an Addendum to this project or as a separate project, whichever is more convenient to both government and any donors involved.

For the duration of the project the planning of utilization schemes and the preparation of project memoranda will be undertaken by a resource economist posted in the Planning Unit of the Ministry of Commerce and Industry. This officer's terms of reference will be:

- (a) to review schemes proposed by the Department of Wildlife and to select those which warrant in depth investigation by a consultant;
- (b) to evaluate reports by consultant's on proposed schemes and to arrange appropriate consultation with local and central government authorities on consultant's reports;
- (c) to produce project memoranda for those schemes which are favourably reviewed by consultants and approved of by appropriate authorities;
- (d) to obtain funding for and initiate implementation of projects accepted by the Ministry of Finance.

The resource economist will work with a counterpart in the MCI Planning Unit, who will take over his functions after the three years of the project.

Animal population and habitat monitoring programs

The team will consist of one animal ecologist and one range ecologist, assisted by two equivalent counterpart staff members from the Department of Wildlife and up to six field assistant, of at least Game Scout level, from the Department of Wildlife.

For the three years of the project methods will be developed and tested and local officers will be trained in the use of techniques. This officers will take over operation of the monitoring schemes after the three years of the project have elapsed.

Both the animal and range ecologists will submit quarterly progress reports to the Department of Wildlife. At the end of three years a full report on and guide to both animal population and habitat monitoring systems will be presented to the Department of Wildlife.

5. FINANCIAL ANALYSIS (see Appendix 1)

A. Pilot training scheme for individual hunters

Consultant (one man month)	P6400
Hire Toyota Land Cruiser for Consultant	<u>P1000</u>
TOTAL	<u>P7400</u>

B. Investigation and Development of training, harvesting and processing schemes

Technical Assistance

Consultancies (this is an estimate allowing for 4 man months of consulting per annum over 3 year)	P76,800
Salary resource economist (3 years)	<u>P144,000</u>
TOTAL	<u>P220,800</u>

C. Monitoring Program

(i) Capital Expenditure

2 x Toyota Land Cruiser (1 each for animal & Range ecologist)	P19,000
Camping equipment	3,174
Field and laboratory equipment	36,000
15% contingency	<u>9,176</u>
TOTAL	<u>P70,350</u>

(ii) Technical Assistance and running costs

Salary animal ecologist (3 years)	P144,000
Salary range ecologist (3 years)	144,000
Labour	14,759
Vehicle running costs	72,923
Aircraft running costs	112,856
Photographic supplies & processing	8,945
Chemical analysis	<u>20,835</u>
TOTAL	<u>P516,318</u>

Total including Capital Expenditure P586,668

D. Economic and Social Analysis

With the undertaking of extensive aerial surveys during recent years it has, for the first time, become possible to make rational guesses at the overall size of the wildlife resource in Botswana. On the basis of these aerial surveys it is quite reasonable to suggest that there are at least 2 million wild herbivores (ranging in size from elephant to steenbok) in Botswana. The value of this resource may be between P50 - 100 million.

The extent to which this resource is used is not well documented but such figures as are available indicate a harvesting rate of well under 5%. At this low rate of off-take the contribution of the wildlife resource to the economy of Botswana is at least P4 million, much of which accrues to the poorer segment of the rural population in the form of a subsistence food supply.

There is no doubt that the wildlife resource is currently under-utilized and that it is inefficiently utilized. The harvesting rate could probably safely be raised 2 - 3 times and economic returns could be substantially increased through improved processing and marketing.

It would be reasonable to look upon Botswana's wildlife populations as a significant resource which could, without prejudice to any other group, be developed specifically for the benefit of the rural poor. This is precisely what the present project aims to do.

There are at least three ways in which the rural poor could benefit from the development of wildlife utilization:

- (i) The creation of employment;
- (ii) The generation of revenue for local development;
- (iii) The improvement of returns to individual hunters.

There are two types of wildlife - related economic activity which are capable of generating employment opportunities. Firstly, there is scope for the expansion of wildlife based tourism and creation of jobs in all sectors of the tourist industry. Secondly, there is considerable potential for commercial cropping of wildlife populations, for example zebra at Nakradikgadi, buffalo in and around the Delta, and Wildebeest and hartebeest in the Kalahari. Commercial cropping operations would provide jobs of several different types, for example: field staff for cropping operations, labour and management for meat processing, labour and management for the production of hides, curios etc.

Apart from generating employment commercial cropping schemes could produce appreciable revenues for local authorities. An example will be used to illustrate this point.

At present there are probably in excess of 50,000 zebra on the western edge of the Nakradikgadi Pan. A commercial cropping operation could take at least 5,000 animals per year. A royalty of P50 per animal would be entirely reasonable and would mean a yearly income of P250,000 to the District Council.

At present returns to individual hunters for hides and trophies, even of valuable species, are much lower than they could be. This is mainly because of incorrect treatment of materials. Education in the correct treatment, which involves very simple procedures, could appreciably improve returns. Further instruction in tanning and production could lead to the growth of a cottage industry producing tanned skins, high quality karosses, curies etc. along the lines of the handicrafts industry tapped by Botswanaeraft.

3. Relationship to other Projects

This project is a direct follow up of the current Countrywide Animal and Range Assessment Project. It is also a logical successor to the UNDP Okavango Project (Wildlife Component) and the Department of Wildlife's Elephant and Buffalo Survey.

In a broader context, it complements and may eventually be linked with the Range Monitoring programme in the Ministry of Agriculture. If the Department of Wildlife's monitoring programme can be linked to that of the Ministry of Agriculture, an invaluable countrywide monitoring system will have been developed.

The project will also contribute to the Rural Industrial Officer Cadre Project by providing training and extension services to those involved in rural processing and manufacturing of wildlife products.

F. Environmental Considerations

This project is deemed to be environmentally sound in that it is promoting activities which are appropriate to Botswana's resources and are sustainable.

One criterion for evaluating the environmental soundness of a project is whether it is appropriate. A project meets this criterion if it takes into account the diversity of the natural resource base rather than treating it as a homogeneous animal and plant population. This project meets this criterion by basing utilization schemes on an initial data base (1979) and proposing several types of utilization which make full use of the diversity of the resource base.

Another criterion for evaluating the environmental soundness of a project is whether or not it is sustainable. A project meets this criterion if it sets utilization rates within the rate of renewable resource production. This project meets this criterion by basing both individual and commercial take-off rates on the average rate of population renewal for each species in each geographic area.

APPENDIX 1

FINANCIAL COMMITMENT REQUESTED DURING FIRST YEAR OF FUNDING

ITEM	1980/81	1981/82	1982/83
Salary Resource economist*	43,000	43,000	43,000
Consultant ^{xx} to train hunters	6,400		
Market & Research Consultant	12,300		
Abattoir & meat factory Consultant	6,400		
Cropping techniques Consultant	6,400		

- Note: (1) Financial commitment requested during first year of funding = P176,000
- (2) Funds to be spent in first year of funding = P80,000

*see Appendix 2 for Terms of Reference
xxsee Appendix 2 for Terms of Reference

APPENDIX 2

TERMS OF REFERENCE

1. CONSULTANT RESOURCE ECONOMIST (3 years)

QUALIFICATIONS and TERMS OF REFERENCE

(a) Qualifications:

The consultant must have at least a Master's degree (preferably a Ph.D.) in Resource Economics and ideally would have three or more years of experience in planning the management and development of natural resources.

(b) Terms of reference:

The consultant will be required:

- (i) to review training and utilization schemes proposed by the Department of Wildlife and to select those which warrant in depth investigation by a consultant;
- (ii) to evaluate reports by consultant's on proposed schemes and to arrange appropriate consultation with local and central government authorities on consultant's reports;
- (iii) to produce project memoranda for those schemes which are favourably reviewed by consultants and approved of by appropriate authorities;
- (iv) to obtain funding for and initiate implementation of projects accepted by the Ministry of Finance.

2. CONSULTANT: Pilot training scheme for individual hunters (1 month)

(a) Qualifications:

The Consultant must have at least 5 years experience of cropping and processing large wild mammals under conditions similar to those prevailing in contemporary Botswana.

(b) Terms of reference:

The consultant will be required:

- (i) to design a short training course for local hunters, the aim of which will be to teach them the best ways of harvesting animals and of handling raw meat and skins;
- (ii) to conduct a short (1 - 2 weeks) workshop at Tshabong in which local hunters will be put through the training course.

3. CONSULTANT: Market research into sale of skins, skin products, curios, handicrafts etc. (2 months)

(a) Qualifications:

The Consultant should have some training in commerce or business and must have at least 5 years experience in market research.

(b) Terms of reference:

The Consultant will be required:

- (i) to assess existing marketing arrangements for skins, skin products, curios handicrafts etc.
- (ii) investigate possible additional local and overseas markets for these products;
- (iii) make recommendations on improving existing marketing arrangements (quality control etc) and on gaining access to new markets.

4. CONSULTANT: Assessment of the Feasibility of Establishing a meat processing plant in Maun (1 month)

(a) Qualifications:

The Consultant must be an Architect or Engineer with experience in the design and construction of abattoirs and meat processing facilities for the handling of wild animals.

(b) Terms of reference:

The Consultant will be required to do a preliminary cost and feasibility assessment on the establishment of a facility in Maun for processing wild animals harvested in the field and domestic livestock slaughtered on the premises.

5. CONSULTANT: Harvesting methods for Maun processing facility (1 month)

(a) Qualifications:

The Consultant must have at least 5 years experience of commercial cropping of wildlife under conditions similar to those prevailing within a 300km radius of Maun.

(b) Terms of reference:

The Consultant will be required to familiarize himself with field conditions in the vicinity of Maun and to propose cropping methods for wildlife populations in the area.

PROJECT ADDENDUM

A. BOTSWANA GOVERNMENT CONTRIBUTION TO COSTS OF RESOURCE ECONOMIST (per annum)

(i) Base salary of Resource Economist	P5892
(ii) Housing	2220
(iii) In country transport	1300
(iv) Counterpart salary	<u>5892</u>
TOTAL	<u>P15304</u>

B. BOTSWANA GOVERNMENT CONTRIBUTION TO COSTS OF SHORT-TERM CONSULTANTS

In country transport	P1200
----------------------	-------