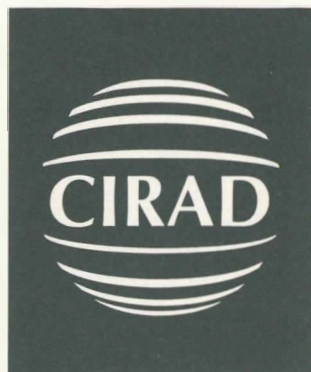


**Department of Forestry  
Lao PDR**

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Centre  
de coopération  
internationale  
en recherche  
agronomique  
pour le  
développement

**FOURTH  
6 MONTHLY PROGRESS REPORT  
JANUARY - JUNE 1997**

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**CIRAD-Forêt - MIDAS - Burapha**

**Lao ADB Plantation Forestry Project - Loan No, 1295 (SF)**

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**July 1997**

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## LIST OF ABBREVIATIONS & ACRONYMS

ADB	Asian Development Bank
APB	Agricultural Promotion Bank
AV	Audio visual
BOL	Bank of Lao
BME	Benefit Monitoring and Evaluation
DAFI	Development Agriculture & Forest Industry (Govt. enterprise)
DAFO	District Agriculture & Forestry Office
DOF	Department of Forestry
EMR	Environmental Monitoring Report
EBS	Environmental Baseline Survey
EMS	Environmental Monitoring System
GIS	Geographic Information System
GOL	Government of Lao
MAF	Ministry of Agriculture and Forestry
MCTPC	Ministry of Communication, Transport, Post and Construction
PAM	Project Administration Memorandum
PAFO	Province Agriculture & Forestry Office
PBP	Pilot Block Plantation
PCU	Project Co-ordination Unit
PFP	Pilot Farm Plantation
PPCU	Provincial Project Co-ordination Unit
PSP	Permanent Sample Plot
R&D	Research and Development
STP	Socio Technical Profile
TA	Technical Assistance consultancy for institutional strengthening

## PHOTOGRAPHS



**Photo 1.** PCU and PPCU brought APB clients and nurseries together and supplied contract forms for seedling supply between the 2 parties. PCU imported high quality seed for all clients and sold it at cost to the nurseries that had contracts to supply clients. This photo is of the initial meeting in Vientiane Province.



**Photo 2.** The APB branches in the 4 provinces approved credit lines for 875 ha and farmers established 785 ha of plantations. This photo is of the APB branch office in Phonhong District, Vientiane Province receiving a client's application.



**Photo 3.** PPCU and PCU visited clients to observe progress of plantation establishment and advise on techniques. This photo is taken at Khantabury District, Savannakhet Province



**Photo 4.** Twelve nurseries in 4 provinces grew 1,321,608 seedlings for APB clients' plantation establishment for Part A of the project. This photo is of the Army Nursery in Vientiane Prefecture.



**Photo 5.** Four nurseries one per province produced a total of 688,482 seedlings for planting in the PBPs and PFPs of Part B of the project. This photo is of the State Enterprise # 3 Nursery in Bolikhamsay Province.



**Photo 6.** The ten types of trials established in various 1996 PBPs were measured, A cattle fodder trial and Boron deficiency trial were established in 1997 PBPs. This photo shows the measurement of fertiliser trial in 1996 planted trees at Pha Baht PBP.



**Photo 7.** Permanent Sample Plots (PSP) to measure tree growth were established in all the various stands of 1995 PBPs. This photo shows PSP training in 1995 planted trees of Phon Tong PBP. During this period 363 training man days were achieved on 13 courses which were conducted by PCU and specialists.



**Photo 8.** Environmental Baseline Surveys (EBS) were completed for all four 1997 PBPs. This photo shows PCU /PPCU conducting a soil description and sampling for laboratory testing which is part of the EBS in Non Savang PBP.





**Photo 9.** All 1995 and 1996 PBPs were visited by PPCU / PCU for Environmental Monitoring (EM) to investigate what environmental changes have occurred in the PBPs. This photo shows PCU, PPCU and villager conducting EM while being trained by the environmental specialist.



**Photo 10.** Extension work with the farmers was a major activity for PPCU during this period to explain to them correct plantation establishment techniques, environmental protection methods and credit line procedures. This photo shows an AV presentation at Phon Sim Village. The AV material is produced by the PCU.



**Photo 11.** Field visits were used in the provinces to demonstrate to APB clients and provincial authorities correct plantation techniques. This photo shows a visit to the 1996 planted Phon Tong PBP.



**Photo 12.** The PCU Extension Section produced and distributed to villages in the sub-project areas a calendar describing; plantation operation schedule, environmental and operational techniques, seedling production and transport. This photo is of villagers at Phon Sim with the calendar on their village notice board.



**Photo 13.** During this period 4 PBPs totalling 61.6 ha were prepared and established. This photo shows the Phon Si PBP with protection strips, before planting.



**Photo 14.** *Acacia mangium* has performed well and is very suitable for farmer planting situations. These 12 month trees line the internal access road of Na Kha 1996 planted PBP.



**Photo 15.** Before land clearing all land intended for plantation establishment is checked for suitability by STP survey. Only severely degraded forest, or open land without food growing potential is used. This photo shows the checking of Som Sa Art PBP by PCU, PPCU and villagers.



**Photo 16.** During this period 264.6 ha of PFPs were planted by 296 families and 20 institutions in the 4 provinces. This photo shows planting of a PFP in Thoulakhom District, Vientiane Prefecture.



**Photo 17.** This PFP in Bolikhamsay Province demonstrates the land preparation for planting on the sloping ground at the bottom of the photo while preserving the flat areas for rice production in the distance.



**Photo 18.** Some farmers are successfully practising cattle grazing together with tree plantations in their PFPs, providing no buffaloes are allowed as they damage trees. This 1996 planted PFP is in Xaiburi District of Savannakhet Province.



**Photo 19.** Farmers are experimenting successfully with various crops in agro-forestry systems they plant after discussions with extension staff of PPCU. This farmer tries pineapples and chillies with his 1996 *Acacia* and *Eucalyptus* trees.



**Photo 20.** Trees have been given to villagers to plant along roads and fence lines. This photo shows *Acacias* planted along the villagers fence in Tulakhom District of Vientiane Province.



**Photo 21.** During this period a total of 13.7 km of roads were constructed at 3 sites. This road was at Phon Sim PBP.



**Photo 22.** In this period 39 km on 5 new roads have been 60% completed for survey and design for new construction. This Photo is of the new road at Na Kha PBP.

# 1 ບົດສະຫຼຸບ ການດຳເນີນງານ ໂດຍຫຼັງ

ບົດລາຍງານ ຄວາມຄືບໜ້າ ປະຈຳ 6 ເດືອນ ຄັ້ງທີສີ່ມີ ແມ່ນ ການສະຫຼຸບຫຼັງ ກ່ຽວກັບ ການເຄື່ອນໄຫວ ຈັດຕັ້ງປະຕິບັດ ແລະ ຄວາມຄືບໜ້າ ຂອງໂຄງການ ປູກໄມ້ ອຸດສາຫະກຳ ລາວ-ເອດີບີ. ທີ່ປຶກສາ ຂອງບໍລິສັດ CIRAD - Forêt ໂດຍມີເຄືອຄ່າຍຮ່ວມກັບ ບໍລິສັດ MIDAS Agronomics ແລະ ບໍລິສັດ ບົວລະພາ ທີ່ປຶກສາ ແລະ ວິສາວະກອນ ທີ່ກຳລັງໃຫ້ການຊ່ວຍເຫຼືອ ແກ່ ກົມປ່າໄມ້ ແຫ່ງ ສ.ປ.ປ.ລາວ ໃນການຈັດຕັ້ງປະຕິບັດ ໂຄງການ ດັ່ງກ່າວນີ້.

ບົດລາຍງານ ຄັ້ງທີສີ່ມີ ກວມເອົາ ຊ່ວງໄລຍະເວລາ 6 ເດືອນ ຊຶ່ງເລີ່ມຈາກ ວັນທີ 1 ເດືອນ ມັງກອນ 1997 ຫາ ວັນທີ 30 ເດືອນ ມິຖຸນາ 1997.

ບົດລາຍງານ ສະເໜີກ່ຽວກັບ :

- ຄວາມຄືບໜ້າ, ບັນຫາຕ່າງໆ ແລະ ສະພາບຂອງການຈັດຕັ້ງປະຕິບັດ ໂຄງການ ພາຍໃນ 6 ເດືອນ ຜ່ານມາ.
- ການປັບປຸງໜ່ວຍປະສານງານໂຄງການຂັ້ນກົມປ່າໄມ້ (PCU), ໜ່ວຍປະສານງານໂຄງການຂັ້ນແຂວງ (PPCU), ຊຽວຊານ ແລະ ພະນັກງານ ຊ່ວຍວຽກຂອງຊຽວຊານ.
- ກິດຈະການຕ່າງໆຂອງຊຽວຊານ, ປັດໃຈນຳເຂົ້າ ແລະ ກຳນົດເວລາ ຢູ່ໃນ 6 ເດືອນ ຜ່ານມາ.
- ຄ່າໃຊ້ຈ່າຍຕ່າງໆ ຂອງຊຽວຊານ ພາຍໃນ 6 ເດືອນຜ່ານມາ ແລະ ນັບຕັ້ງແຕ່ ການເລີ່ມຕົ້ນໂຄງການ ເປັນຕົ້ນມາ.
- ແຜນວຽກ ປັດໃຈນຳເຂົ້າ ຈາກການຈັດຕັ້ງປະຕິບັດ ຂອງຊຽວຊານແຕ່ລະຄົນ ສຳລັບ 6 ເດືອນ ໃນຕໍ່ໜ້າ.

ສັງລວມຫຼັງຂອງຜົນສຳເລັດວຽກງານພາຍໃນໂຄງການ ຢູ່ໃນຊ່ວງ 6 ເດືອນຄັ້ງທີສີ່ມີ ມີຄື

**ພາກ ກ.** ສວນປູກໄມ້ ຂອງບັນດາລູກຄ້າ ທີ່ໄດ້ຮັບສິນເຊື່ອ ຈາກ ທ.ສ.ກ ໄດ້ຖືກສ້າງຂຶ້ນເປັນຄັ້ງທຳອິດ ມີທັງໝົດ 785 ເຮັກຕາ.

**ພາກ ຂ.** ສຳເລັດ ການສ້າງສວນປູກໄມ້ທົດລອງ/ສາທິດ(PBP) ຊຶ່ງໄດ້ເລີ່ມປູກມາແຕ່ປີ 1995 ສຳເລັດການສ້າງສວນປູກໄມ້ຄອບຄົວຕົວແບບ(PFP) ຊຶ່ງໄດ້ເລີ່ມປູກມາແຕ່ປີ 1996.

**ພາກ ຄ.** ສຳເລັດ ການສ້າງເສັ້ນທາງສາມແຫ່ງ ຊຶ່ງມີຄວາມຍາວທັງໝົດ 13,7 ກິໂລແມັດ, ໄດ້ ສິ້ນ ເລີ່ມ ການສຳຫຼວດ ແລະ ອອກແບບ ການສ້າງທາງເສັ້ນໃໝ່ອີກຕື່ມ ຊຶ່ງມີ ຄວາມຍາວ 39 ກິໂລ ແມັດ.

**ພາກ ງ.** ສືບຕໍ່ ວຽກງານຄຸ້ມຄອງໂຄງການ ຊຶ່ງປະກອບດ້ວຍ ວຽກງານ ຝຶກອົບຮົມ, ສົ່ງເສີມ ແລະ ຕິດຕາມກວດກາ ດານສະພາບແວດລ້ອມ/ສິ່ງຄົມ.



ລະອຽດ ກ່ຽວກັບ ໜ້າວຽກໃຫຍ່ໆ ທີ່ໄດ້ຖືກຈັດຕັ້ງປະຕິບັດມີດັ່ງລຸ່ມນີ້ :

**ພາກ ກ.**

- ຕອບສະໜອງ ຊຸດຝຶກອົບຮົມ ກ່ຽວກັບ ເຕັກນິກ ສວນກ້າເບ້ຽໂມ້ ສຳລັບຜະລິດເບ້ຽໂມ້ ໃຫ້ແກ່ ໂຄງການ ຢູ່ພາຍໃນ 4 ແຂວງ ຊຶ່ງມີ ພະນັກງານ ຈາກສວນກ້າເບ້ຽໂມ້ ແລະ ໜ່ວຍປະສານ ງານ ໂຄງການຂັ້ນແຂວງ ເຂົ້າຮ່ວມຈຳນວນ 15 ຄົນ.
- ນຳເອົາ ແກ່ນໂມ້ທີ່ມີຄວາມສະພາບດີ ຈາກຕ່າງປະເທດເຂົ້າມາ ເພື່ອທຳການຜະລິດເບ້ຽໂມ້ໃຫ້ແກ່ ລູກຄ້າຂອງໂຄງການ. ຊ່ວຍຊຸກຍູ້ ລູກຄ້າຂອງ ທສກ ຢູ່ໃນ 4ແຂວງ ເພື່ອເຮັດສັນຍາ ກັບ ສວນກ້າ ຈຳນວນ 12 ແຫ່ງ ໃນການຜະລິດເບ້ຽໂມ້ ຈຳນວນ 1.321.608 ເບ້ຽ ສຳລັບ ສ້າງສວນປູກໂມ້ພາກປ່ອຍສິນເຊື້ອ. ລົງຊື່ນຳ ສວນກ້າແຫ່ງຕ່າງໆ ທີ່ເປັນ ລູກຄ້າຂອງໂຄງ ການ.
- ສຳລັບ ປີ 1997 ແມ່ນປີທຳອິດ ທີ່ທາງ ທສກ ໄດ້ປ່ອຍສິນເຊື້ອ ເພື່ອ ການປູກໂມ້, ມີເນື້ອ ທີ່ ຈຳນວນ 875 ເຮັກຕາ ທີ່ທາງລູກຄ້າໄດ້ສະເໜີຂຶ້ນມາ, ແຕ່ປະຕິບັດຕົວຈິງໄດ້ພຽງ 785 ເຮັກຕາ ເທົ່ານັ້ນ ທີ່ທາງລູກຄ້າຂອງໂຄງການໄດ້ສ້າງຂຶ້ນ. ປະກອບສ່ວນ ແລະ ຊື່ນຳ ດ້ານເຕັກນິກ ໃຫ້ແກ່ ລູກຄ້າ/ ທສກ ແລະ ຕິດຕາມ ລູກຄ້າ ໃນການຈັດຕັ້ງປະຕິບັດ ເພື່ອ ໃຫ້ຖືກຕ້ອງທາງ ດ້ານເຕັກນິກ ແລະ ສະພາບ ແວດລອມ.

**ພາກ ຂ.**

- ໄດ້ຄັດເລືອກຜູ້ຮັບເໝົາ ຜະລິດເບ້ຽໂມ້ ເພື່ອຕົກລົງ ແລະ ເຊັນສັນຍາ ຜະລິດ ເບ້ຽໂມ້ ຈຳນວນ 688.482 ເບ້ຽ ຢູ່ໃນ 4 ແຂວງ ສຳລັບ ຮັບໃຊ້ ສວນທົດລອງ ແລະ ສວນຕົວແບບ.
- ໄດ້ຄັດເລືອກຜູ້ຮັບເໝົາ ເພື່ອຕົກລົງ ແລະ ເຊັນສັນຍາ ກັບ ຜູ້ຮັບເໝົາ ກ່ຽວກັບ ການກະກຽມເນື້ອທີ່ ແລະ ການສ້າງສວນປູກໂມ້ທົດລອງ ຈຳນວນ 4 ບ່ອນ ຢູ່ໃນ 4 ແຂວງ ຊຶ່ງ ມີເນື້ອທີ່ ທັງໝົດ 61,6 ເຮັກຕາ. ວຽກງານປູກໂມ້ ແມ່ນຍັງສືບຕໍ່ດຳເນີນຢູ່ ປະມານ 85% ໄດ້ສຳເລັດ, ວຽກງານສ້າງສວນທົດລອງ ມາເຖິງປະຈຸບັນ ແມ່ນໄດ້ 95% ຂອງຄາດໝາຍ ໂຄງການ ວາງອອກ ແລະ ຄາດວ່າ ຈະໃຫ້ສຳເລັດ.
- ວຽກງານ ສ້າງສວນຕົວແບບ ຂອງຊາວກະສິກອນ, ໄດ້ຝຶກອົບຮົມ, ໄດ້ຕອບສະໜອງເບ້ຽໂມ້ ແລະ ໄດ້ລົງຊຸກຍູ້ດ້ານເຕັກນິກ ໃຫ້ແກ່ ຊາວກະສິກອນ ເພື່ອສ້າງສວນຕົວແບບ ທີ່ປູກໄດ້ແລ້ວ ຈຳນວນ 264,6 ເຮັກຕາ, ການສ້າງສວນຄອບຄົວຕົວແບບ ມາຮອດປະຈຸບັນ ແມ່ນໄດ້ 124% ຂອງຄາດໝາຍໂຄງການວາງອອກ ແລະ ຄາດວ່າ ຈະໃຫ້ສຳເລັດ.
- ໄດ້ເສັຽຫຼັງ, ຍົວລະບັດຮັກສາ ແລະ ປ້ອງກັນ ສວນປູກໂມ້ຕົວແບບ ທີ່ໄດ້ປູກແລ້ວ ໃນປີ 1995 ແລະ ປີ 1996 ຈຳນວນ 167 ເຮັກຕາ.

**ພາກ ຄ.**

- ວຽກງານສ້າງທາງ ຈຳນວນ 3 ເສັ້ນ ຊຶ່ງມີຄວາມຍາວ ທັງໝົດ 13,7 ກິໂລແມັດ ຊຶ່ງໄດ້ ເສັ້ນມາ ແຕ່ ທ້າຍປີ 1996 ແມ່ນໄດ້ສຳເລັດ ແລະ ໄດ້ມອບຮັບກັນຢ່າງເປັນທາງການແລ້ວ, ໝາຍ ຄວາມວ່າ ຈຳນວນທັງໝົດວຽກງານສ້າງພື້ນຖານ ທີ່ໂຄງການໄດ້ສ້າງສຳເລັດແລ້ວ ມີ 15,7 ກິໂລແມັດ ຊຶ່ງ ປະກອບມີ ການສ້າງທາງ ແລະ ຂົວ 1ແຫ່ງ.

- ໄດ້ສະເໜີແຜນ ການສ້າງທາງຕື່ມອີກຈຳນວນ 39 ກິໂລແມັດ. ເອກກະສານ ການປະມຸນ ແລະ ສັນຍາ ກ່ຽວກັບ ວຽກງານສຳຫຼວດ ແລະ ອອກແບບ ທາງ 5 ເສັ້ນ ແມ່ນໄດ້ເຮັດສຳເລັດແລ້ວ ຢູ່ ແຂວງ ກຳແພງນະຄອນ, ແຂວງ ວຽງຈັນ ແລະ ແຂວງ ບໍລິຄຳໄຊ, ວຽກງານສຳຫຼວດທາງ ໄດ້ສຳເລັດແລ້ວ 3 ເສັ້ນ ແລະ ອີກ 2 ເສັ້ນ ສຳເລັດ ແລ້ວ 60%.

ພາກ ໘.

- ສຳເລັດ ການລົງເກັບກຳຂໍ້ມູນພາກສະໜາມ ກ່ຽວກັບ ການສຳຫຼວດເບື້ອງຕົ້ນດ້ານສະພາບ ແວດລ້ອມ ຂອງ ສວນທົດລອງ ປີ 1997.
- ໄດ້ທຳການທົດລອງ ສອງຮູບແບບຂອງການທົດລອງຢູ່ ທາງ ສວນທົດລອງ/ສາທິດ ຂອງໂຄງການ ຄື ທຳການທົດລອງ ປູກຕົ້ນໄມ້ ເພື່ອລຽງສັດໃສ່ ແລະ ທຳການທົດລອງໃສ່ຝຸ່ນ ທາດ ບໍ່ຮອນ (Bron deficiency trial).
- ໄດ້ສ້າງຕອນທົດລອງຕົວຢ່າງບາງອອນ ເພື່ອຕິດຕາມ ການຈະເລີນເຕີບໂຕຂອງຕົ້ນໄມ້ຂຶ້ນ ຢູ່ ສວນ ປູກໄມ້ທົດລອງ ປີ 1995.
- ໄດ້ເປີດຊຸດຝຶກອົບຮົມ ຂຶ້ນ 6 ເທື່ອ ຊຶ່ງມີຜູ້ເຂົ້າຮ່ວມທັງໝົດ 363 ເທື່ອຄົນ(man days).
- ວຽກງານສົ່ງເສີມ ໄດ້ລົງຊຸກຍູ້ ຊາວກະສິກອນປູກໄມ້ສວນຕົວແບບ ໄດ້ 264,6 ເຮັກຕາ ແລະ ສວນປູກໄມ້ ພາກສິນເຊື້ອ ຂອງ ທສກ ໄດ້ 785 ເຮັກຕາ.
- ຕອບສະໜອງ ການຝຶກອົບຮົມ ກ່ຽວກັບ ເຕັກນິກສວນກ້າ ເພື່ອຜະລິດເບັ້ງໄມ້ໃຫ້ແກ່ໂຄງການ ຢູ່ 4 ແຂວງ ມີຜູ້ເຂົ້າຮ່ວມ 15 ຄົນ ຊຶ່ງມາຈາກ ພາກສ່ວນສວນກ້າແຫ່ງຕ່າງໆ ແລະ ຫນ່ວຍປະ ສານງານ ໂຄງການຂັ້ນແຂວງ.

## 1. EXECUTIVE SUMMARY

This fourth 6 monthly progress report is a summary of the implementation activity and progress of the LAO-ADB Industrial Tree Plantation Project. The consultant, CIRAD-Forêt in association with MIDAS Agronomics and Burapha Development Consultants are assisting the Department of Forestry of the Lao PDR in the implementation of this project.

This fourth report covers the period of 6 months from 1 January 1997 to 30 June 1997.

This document reports on;

- Progress, problems and status of the project implementation over the last 6 months.
- Strength of PCU, PPCU, specialists and local support staff.
- Specialists activities, inputs and time provided over the last 6 months.
- Consultant's expenditure over the last 6 months and since start of project.
- Implementation input work plan of each specialist for the next 6 months.

A brief overview of the project achievements during this fourth 6 month reporting period are:

Part A The first plantations of 785 ha were established by the APB credit line clients.

Part B The demonstration pilot block plantings (PBP) started in 1995 were completed.  
The demonstration pilot farmer plantings (PFP) started in 1996 were completed.

Part C Three road construction works with a total of 13.7 km were completed, survey and design for 39 km of new road construction was begun.

Part D Project support consisting of extension, training, and environmental / social monitoring continued.

In more detail the following major operational activities were implemented;

### Part A

- Provided training in nursery techniques for the production of project seedling requirements in the four provinces for the staff of 15 nurseries and PPCUs.
- Imported high quality seed for clients' seedlings. Assisted the APB clients in the 4 provinces to make contracts with 12 nurseries to provide 1,321,608 seedlings for credit plantation establishment. Supervised nurseries for clients.
- 1997 was the first year of APB credit and credit lines were issued for 875 ha and only 785 ha were actually established by clients. Provided technical guidance to clients and APB and monitored client's compliance with environmental and technical requirements.

### Part B

- Recruited nursery contractors, negotiated and signed contracts and produced a total of 688,482 seedlings in the 4 provinces for PBPs and PFPs.

- Recruited contractors, negotiated and signed contracts for land preparation and establishment of 4 new PBPs in the 4 provinces totalling 61.6 ha. Planting is in progress and is 85% completed. Establishment to date of PBPs is 95% of total project target and is considered completed.
- PFP activities in farmer selection, training, provision of seedlings and assistance to farmers resulted in planting of 264.6 ha of PFPs. Establishment to date of PFPs is 124% of total project target and is considered completed.
- Weeding, maintenance and protection of 167 ha of 1995 and 1996 planted PFPs.

### **Part C**

- The three roading construction works totalling 13.7 km started in late 1996 have been completed and accepted. This brings the total civil works completed by the project to 15.7 km of road construction and one bridge.
- Submitted plans for a further 39 km of road construction works. Bid documents and contracts completed for the five road survey and design works in Vientiane Prefecture, Vientiane Province and Bolikhamsay Province. Three surveys are completed and two are 60% completed.

### **Part D**

- Environmental Baseline Survey field data collection was completed for 1997 PBPs.
- Two further PBP types of trials were established in various PBPs; cattle fodder tree trial and Boron deficiency trials.
- The permanent sample plot system for tree growth monitoring was established in 1995 plantations.
- Six training courses with a total of 363 training man days have been organised and held.
- Extension activities resulting in farmer assistance for the planting of 264.6 ha of PFPs and 785 ha of APB credit line plantations.
- Provided training in nursery techniques for the production of project seedling requirements in the four provinces for the staff of 15 nurseries and the PPCUs.

## 2. INTRODUCTION

### 2.1 Project

The Industrial Tree Plantation Project known in Lao PDR as the Lao-ADB Plantation Forestry Project is located in eight of the thirty four districts which comprise Vientiane Prefecture, and the provinces of Vientiane, Bolikhamsay and Savannakhet. The project is comprised of four parts

- Part A : Provision of a credit facility for smallholder farmers and private enterprises to finance the establishment of industrial tree plantations on about 9,000 ha of unstocked and degraded forest land;
- Part B : Establishment of pilot block and pilot farmer plantations on 560 ha;
- Part C : Improvement of plantation access roads; and
- Part D : Project management support including nursery improvement, public awareness programs, incremental staffing and logistical support.

The project implementation started in late 1995 and is scheduled to finish in early 2001.

DOF and BOL Credit Department are the executing agencies of this project.

- APB is implementing Part A .
- DOF is implementing Parts B, C and D also co-ordinating and managing the project through the PCU and four PPCUs.

### 2.2 Background

This fourth 6 Month Report of the project implementation covers the period from 1 January 1997 until 30 June 1997. It has been prepared by CIRAD-Forêt, the implementation consultant. This report contains information on the;

- Progress and status of the project implementation to 30 June 1997.
- Specialists activities and inputs provided over the fourth reporting period.
- Issues and recommendations arising from the project.
- Consultants expenditure for the period to 30 June 1990.
- Specialists activities planned for the following 6 months.

### 3. PROJECT IMPLEMENTATION STATUS

#### 3.1 Achievements: up to 31 December 1995 ( 1st period )

##### Part B

- PBP sites were selected and plantings established in 1995 on 5 of these averaging 8 to 10 ha each with a combined area of 49 ha planted.
- Surveyed, demarcated and mapped planting areas for the 1996 planting season.
- Analysed PBP and PFP sites and then put to immediate use the appropriate species and silviculture practices that have proven effective locally and in other regions similar to the Lao site types and formulated plantation concept and design.
- Provided appropriate silviculture schedules for the requirements of the PBP and PFP planting plans.
- Reviewed and redrafted nursery and plantation prescriptions and contracts as required.
- Planned production of 1996 trees and selected nurseries for this.
- Seedlings were produced for the 1995 PBPs including tree production training.
- Weeded and fertilised existing PBPs and protected them from cattle and fire.
- Searched for and confirmed 4 required new PBP and 90 PFP sites with local people by STP process for rational land use.
- Obtained approval from district and provincial authorities as required for above.

##### Part C

- Implemented access roading survey and design for PBP access roads.

##### Part D

- Strengthened and developed the extension ability of PPCU to recruit and service farmers and rural community.
- Establishment of PCU and PPCU including staffing arrangements and training program for operational staff.
- Provided training on economic principles for commercial plantations. Training courses for plantation establishment methods.
- Provided training in appropriate management methods used in the commercial plantation sector. Particularly in the area of contract formulation, management, payments and control.
- Planning of the first annual Environmental Baseline Survey.

#### 3.2 Achievements: 1 January - 30 June 1996 ( 2nd period )

##### Part B

- Provided training in nursery techniques for the production of seedlings in the four provinces.
- Recruited contractors, negotiated and signed contracts and produced a total of 441,000 seedlings in the 4 provinces.

- Recruited contractors, negotiated and signed contracts for land preparation and establishment of 6 new PBP areas in the 4 provinces.
- Land preparation, environmental protection areas surveyed and marked, fence building, and cultivation on all 6 1996 PBP sites was finished ready for planting on schedule.
- Weeding, maintenance and protection of the 1995 PFPs.
- Planting and fertilising on 4 1996 PBPs is completed, and on the other 2 1996 PBPs planting is in progress and will soon be completed.

#### Part C

- Completed survey and design for all PBPs access roads.
- Bid documents and contracts completed for road access works in Vientiane Prefecture, Vientiane Province and Bolikhamsay Province. Savannakhet Province is now in progress.
- Setting up of contract evaluation committee, selection of contractors and the start of construction works for the Phon Thong access road, Vientiane Province and the Nam Souang bridge rehabilitation, Vientiane Prefecture.

#### Part D

- Extension activities resulting in selection, training, provision of seedlings and assistance to farmers resulting in planting of 137 ha of PFPs.
- Environmental Baseline Survey devised, tested and field data collection completed for 7 of the 8 1995 and 1996 PBPs.
- Plantation Management Plans for all 1995 and 1996 PBPs have been completed.

### **3.3 Achievements: 1 July - 31 December 1996 ( 3rd period )**

#### Part B

- Planting, weeding and fertilising of 118.4 ha in six new PBP located in 6 districts of the 4 provinces.
- Planting and weeding of 137.2 ha of PFPs by 108 families and 11 institutions in 43 villages in the 4 provinces.
- Location and approval of more than 73 ha of new PBPs in 3 provinces for planting in 1997.
- Location and approval of 108 ha of PFPs in 4 Provinces for planting in 1997. The balance of 183 ha to be finalised in January.

#### Part C

- Completion of tender documents and contracts for Phon Sim access road.
- Started road access construction civil works in Na Kha, Song Khon Mai and Phon Sim. At end of period these were completed; 60%, 80% and 60 % respectively.
- Completed the on-going construction civil works at the Nam Souang bridge and Phon Tong Access road.

Part D

- Secured two wood purchase agreements for Vientiane Province and two wood purchase agreements for Vientiane Prefecture for the participants of the credit scheme.
- Intensive extension and plantation promotion programme activities for Part A.
- Environmental Baseline Surveys prepared and completed for all existing PBPs. PCU and PPCU trained in; environmental protection, environmental monitoring methods, and analysis of environmental data.
- Preparation of draft reports on; Environmental Monitoring System, Environmental Baseline Survey and 1996 Annual Environmental Monitoring Report.
- BME activities continued and were carried out with all PBP locations being visited and evaluated
- Conducted plantation investment seminars in each of the 4 provinces with the participation of PAFO, APB, Provincial authorities and DOF
- Provided training on a country wide basis with courses in; plantation techniques, STP, environmental protection and plantation economics to PAFO in a series of 3 courses held in the North, Centre and South Lao PDR.
- Provided training courses in environmental protection to PCU and the PPCUs in the 4 provinces.
- Training and strengthening of PPCU, PAFO and APB staff to provide support for the APB credit plantation part of the project.
- Provided support to APB for Part A by doing STP, evaluating applicants' plantation management plans and evaluation of problems and progress.
- Preparation of Permanent Sample Plot Establishment and Measurement Manual in English and translated into Lao.

**3.4 Achievements: 1 January - 30 June 1997 ( 4th period )**Part A

- Arranged for the APB clients in the 4 provinces and assisted them to make contracts with 12 nurseries to provide 1,321,608 seedlings for credit plantation establishment. Imported high quality seed for clients' nurseries.
- 1997 was the first year of APB credit and credit was issued for 875 ha and 785 ha were actually established by clients

Part B

- Recruited nursery contractors, negotiated and signed contracts and produced a total of 688,482 seedlings in the 4 provinces for PBPs and PFPs.
- Recruited contractors, negotiated and signed contracts for land preparation and establishment of 4 new PBPs in the 4 provinces totalling 61.6 ha. Planting is in progress and is 85% completed. Establishment to date of PBPs is 95% of total project target and is considered completed.
- PFP activities resulting in farmer selection, training, provision of seedlings and assistance to farmers resulting in planting of 264.6 ha of PFPs. Establishment to date of PFPs is 124% of total project target and is considered completed.



- Weeding, maintenance and protection of 167 ha of 1995 and 1996 planted PFPs.

#### Part C

- The three roading construction works, 13.7 km, started in late 1996 have been completed and accepted. This brings the total civil works completed by the project to 15.7 km of road construction and one bridge.
- PCU submitted plans for a further 39 km of road construction works. Bid documents and contracts completed for the five road survey and design works in Vientiane Prefecture and the provinces of Vientiane, Savannakhet and Bolikhamsay. Three surveys are completed and two are 60% completed.

#### Part D

- Provided training in nursery techniques for the production of project seedling requirements in the four provinces for the staff of 15 nurseries and PPCUs.
- Environmental Baseline Survey field data collection was completed for 1997 PBPs.
- Two further PBP trials were established; cattle fodder tree trial and Boron deficiency trials.
- The permanent sample plot system for tree growth monitoring was established in 1995 plantations.
- Six training courses with a total of 363 training man days have been organised and held.
- Extension activities resulting in farmer selection and assistance resulted in planting of 264.6 ha of PFPs.

#### 4. PROJECT STAFFING

##### 4.1 PCU

During this reporting period there were no changes numbers of the PCU staff. An Administration Section staff was transferred to Monitoring & Evaluation Section to co-ordinate gender issues. As at 30 June 1997 the PCU staff positions were as follows;

##### PCU Staff Strength as at 30 June 1997

Section	Staff Nos. and Position
Directors	1 Project Director 1 Deputy Project Director
Monitoring & Evaluation Section:	1 Section Head 4 Section staff
Training & Extension Section:	1 Section Head / Training 1 Extension 1 Extension Materials
Plantation Development Section:	1 Section Head / Supervisor South Region 1 Supervisor North Section 1 Supervisor Nurseries / Seed / Road maint.
Administration Section:	1 Section Head 1 Accountant 1 Cashier
A total strength of 16 persons.	

##### 4.2 PPCU

During this reporting period the PPCU Bolikhamsay Province had one new staff has been added. No staff have left. As at 30 June 1997 the PPCU staff numbers and positions were;

##### PPCU Staff Strengths as at 30 June 1997

Position	Nos. in each PPCU			
	Vientiane Pref.	Vientiane Prov.	Bolikhamsay	Savannakhet
Head	1	1	1	1
Admin	1	1	1	2
Extension	2	2	4	3 (includes deputy)
Technical	4	3	2	3
	8	7	8	9
New staff	0	0	1	0
Staff leaving	0	0	0	0

#### 4.3 Implementation Specialists

There are five specialists in the project implementation team fielded by the CIRAD-Forêt consultant in association with MIDAS and BURAPHA.

During the reporting period a project inspection was carried out by the implementation consultant, CIRAD-Forêt. A five day inspection was made by the Regional Representative and a specialist from Head Office. They were satisfied with the project progress.

During 1996 a time extension of 4 man months was approved by GOL and ADB for the Roothing Engineering Specialist Mr Bounsamay Inthavong. This extension was completed by him in February. The Nursery Specialist, Mr Keo Nanthasack completed his 10 month work time for the project in May.

The combined consultancy is allocated a total of 83 man months from May 1995 to December 2000. The specialists work times for the project during this reporting period were;

#### Specialists Work Time During Reporting Period

Specialist	<i>( Work Time in Man Months )</i>		
	1st - 3rd period	This period	Remaining
• Thomas Brummer ( 36 mths.) Plantation Management Specialist / Team Leader	18.17	6.00	11.83
• Anthony Zola ( 7 mths.) Environmental Specialist	1.56	0.77	4.67
• Khamsay Hongsouvanh ( 12 mths.)	12.00	0	0
• Bounsamay Inthavong ( 4 mths. ) Road Specialists	2.57	1.43	0
• Keu Moua ( 14 mths.) Plantation Operation Specialist	10.03	0	3.97
• Keo Nanthasack ( 10 mths.) Nursery Operation Specialist	6.20	3.80	0
<b>TOTAL INPUT</b>	<b>50.53</b>	<b>12.00</b>	<b>20.47</b>

#### 4.4 Local Support Staff

Three local support staff are employed with the implementation consultancy to assist the project. There have been no changes of this staff during this reporting period;

#### Local Support Staff Employed During Reporting Period

Position	No. persons	Employment commenced
Secretary	1	1 July 1996
Accountant	1	1 November 1995
Driver	1	1 June 1995

#### **4.5 Team Leaders Work Schedule**

Under the existing project implementation Schedule the Team Leader / Plantation Management Specialist will have an initial long term assignment of 28 months and then a further 8 months of time divided into short term visits of about 2 months each year. The long term assignment is scheduled to finish at the end of October 1997.

The DOF proposes, the Team Leader and Consultant support that 3 months of the Team Leader's short term assignment be added to the long term so it will finish at the end of January 1997. The short term will then be a balance of 5 months. It is proposed that this time is allocated as follows; 1998 2 months, 1999 2 months and 2000 1 month.

Justification is that August 1997 - January 1998 is the critical time for co-ordinating the Part A credit line and the Team Leader's assistance is required because; ( i ) the 1998 planting season target will be critical to achieve the large planting target needed for the credit line or the 9,000 ha project target will not be achieved, and ( ii ) the addition of 2 new provinces to the list of sub-projects will require assistance for successful implementation without a preparatory phase first.

This proposal is in line with ADB's suggestions to DOF. The 27 February-14 March 1996 ADB Mission proposed that the implementation consultant be made use of for Part A implementation, then the ADB Mission 7-14 November 1996 in its Aide Memoire agreed to continue the implementation consultant's involvement with the establishment of the credit line because this had contributed substantially to the progress achieved.

The implementation plans for the next period, in section 7 of this report, show how the Team Leader's work time will be utilised if this proposal is approved.

## 5. PRINCIPAL WORK ACCOMPLISHED

### 5.1 Plantation Management

#### 5.1.1 1997 PBP Establishment

In 1997 there were 4 new PBPs established with a total area of 61.6 ha. To date a total of 12 PBPs have been established in the four provinces. The target was 240 ha. A total of 228.6 ha was established which is 95% of target. These are considered completed for the project.

Only 3 PBPs were able to be established with PAM's original concept area of 30 ha and therefore 5 extra PBPs were required to make up total area. The balance of PBPs had to be smaller to either comply with villagers' land requirements for other uses, or because most land was privately claimed and the owner was not willing to give it up. Many areas were proposed and surveyed but then rejected by District authorities, the villagers or STP. Since the project appraisal time there has been much development including land allocation and private land claims which have progressed to such an extent that vacant unwanted land was difficult to find.

In order to solve the problem of a not being able to secure a demonstration area in Xaithany District, Vientiane Prefecture, the PCU have been co-operating and advising an individual who is planting 22.5 ha at San Udom with own funds. This plantation will demonstrate local and fast growing species, agro-forestry and various spacings as advised by PCU. The owner is assisting the project by allowing the plantation to be used for plantation demonstration purposes. This 22.5 ha is not included with the PBP areas below.

PBP planting is summarised in the table below;

**PBP Establishment Summary**

Province	1995	1996	1997	Total ha
Vientiane Prefecture				
Na Kha	14.9	14.7	-	29.6
Vientiane Province				
Phon Tong	8.5	41.6	-	50.1
Phon Kham	8.2	-	-	8.2
Bolikhamsay Province				
Song Khon Mai	-	17.7	-	17.7
Pha Baht	-	10.5	-	10.5
Phon Savan	6.9	-	-	6.9
Phon Si	-	-	<b>10.5</b>	10.5
Som Sa Art	-	-	<b>9.8</b>	9.8
Song Khon Kao	-	-	<b>9.3</b>	9.3
Savannakhet Province				
Phon Sim	10.1	20.6	-	30.7
B. Bouthong	-	13.3	-	13.3
Non Savang	-	-	<b>32.0</b>	<b>32.0</b>
	48.6	118.4	<b>61.6</b>	228.6

All the 1997 PBPs are being established using the agro-forestry model.

#### 5.1.2 1997 PFP Establishment

Establishment of PFPs in 1997 was 264.6 ha. These have now been completed for the project.

There is now a total of 401.6 ha planted in the four provinces. The target was 320 ha and achievement has been 125% of target. The extra area was done to compensate for the failure to get a second PBP in Xaithany District, Vientiane Prefecture.

The total plantings are summarised in the table below.

#### PFP Establishment Summary

Province	1995	1996	1997	Total ha
Vientiane Prefecture	-	20.0	<b>95.5</b>	115.5
Vientiane Province	-	17.5	<b>52.9</b>	70.4
Bolikhamsay Province	-	42.2	<b>23.0</b>	65.2
Savannakhet Province	-	57.5	<b>93.2</b>	150.7
	-	<u>137.2</u>	<u><b>264.6</b></u>	<u>401.8</u>

Social details of all the PFPs is contained in the table below;

#### Social Details of PFPs

Province	District	Villages	Families	Institutions	Ha
<b>1996</b>					
Vientiane Prov.	Phonhong	4	2	3	6.0
	Thoulakhom	3	5	-	4.5
	Keoudoom	5	6	1	7.0
Vientiane Pref.	Naxaithong	6	10	-	10.0
	Xaithany	4	7	-	10.0
Bolikhamsay	Paksan	8	8	1	8.0
	Thaphabat	5	23	4	34.2
Savannakhet	Khanthaburi	6	45	2	49.8
	Xaiburi	2	2	-	7.7
<b>1997</b>					
Vientiane Prov.	Phonhong	3	3	1	5.0
	Thoulakhom	9	18	5	27.9
	Keoudoom	2	17	-	20.0
Vientiane Pref.	Naxaithong	12	31	-	50.0
	Xaithany	7	4	3	45.5
Bolikhamsay	Paksan	7	19	-	16.2
	Thaphabat	3	4	-	6.8
Savannakhet	Khanthaburi	11	59	-	56.7
	Xaiburi	3	12	-	12.0
	Xayphuthong	2	<u>22</u>	-	<u>24.5</u>
<b>Total PFPs</b>			<b>296</b>	<b>20</b>	<b>401.8</b>

#### 5.1.3 1995 and 1996 PBP Maintenance

During this reporting period the 167 ha of 1995 and 1996 planted PBPs have had the fire breaks cleared of vegetation and were patrolled to check for cattle invasion.

#### 5.1.4 Training and Extension

Training continues to be an important activity for PCU and PPCU. During this period 363 training man days were conducted in 13 separate courses. They were;

**Training Program Summary for Period**

Training topic	No. trainees	No. days	Man days	Location
Nursery Methods	16	3	48	Bolikhamsay
(PPCU, clients)	15	3	45	Vientiane Prov.
Environment Monitoring (PPCU)	4	1	4	Vientiane Prov.
	4	1	4	Vientiane Pref.
	4	2	8	Bolikhamsay
	4	2	8	Savannakhet
Env. Data Analysis (PCU)	5	1	5	Vientiane
Permanent Sample Plots (PCU)	6	3	18	Vientiane
Permanent Sample Plots (PPCU)	5	3	15	Bolikhamsay
	9	3	27	Vientiane Prov.
	7	2	14	Vientiane Pref.
	9	3	27	Savannakhet
English (PCU, PPCU)	2	70	<u>140</u>	Hoei Ngang
			<b>363</b>	

The nature of extension work is now changing from project presentation, plantation promotion and PFP recruitment during the last two years, to one of APB client recruitment, procedures of credit application and guidance during plantation establishment. This will remain so from now to project completion.

Extension visits for Part A clients need to be more frequent, first visits are sometimes made after land preparation when it is too late to correct errors. Also some visits may not be properly structured for maximum usefulness. Access to the far plantations over poor roads is very difficult and time consuming so these client visits tend to be infrequent or missed.

The extension message must be carefully examined to make it more specifically fit the clients' needs. Booklets should be rewritten drawing on recent experience. The extension staff should keep a brief record of who they visit and when, and make a visit plan for all their clients at the beginning of each year. A check-list of things to inspect and discuss with the client should be followed during each visit. It would be useful to add one strong cross country motorcycle of 125 cc should be added to each PPCU as some clients are more difficult to reach than originally thought.

#### 5.1.5 BME

The BME activities have continued and were carried out with PBP, PFP and credit plantations being visited and evaluated by PCU /PPCU and Team Leader. The topics that were monitored included; environmental impacts, social impacts, village income, gender participation, land use conflict, labour availability, environmental impact, social and economic impact, crop yields from plantations, quality of PPCU extension activities, quality and growth of plantations.

To date the BME survey and interviews of May-June 1997 by PCU /PPCU and Team Leader have shown no negative impacts to the villagers who are either participants or non participants. These reports were prepared as part of the annual review.

The 1997 BME findings were ;

- The 1995 and 1996 PBP's and PFP's followed the technical requirements of the project.
- No negative social or environmental effects were discovered.
- 30 % of Phon Savan and Phon Kham 1995 PBP trees have shown slow growth because of delays in contractor's weeding operations and over-big seedlings.
- Phon Tong 1996 PBP was planted late because of seedling production problems.
- PPCU and APB must increase the volume and quality of their extension services to clients.
- Mini STP must be done for all client areas less than 5 ha.
- APB credit provision was too late for some clients.
- There were more than 2,000 ha of applications for STP services for Part A, 1,284 ha of STP certificates were approved, APB granted credit for 875 ha but only 785 ha are actually being established by the clients in 1997.
- All sub-project PPCUs and APB branches have enough training and manpower for client service requirements.
- APB and BOL need to clarify their procedures for replenishment of funds as lack of funds led to rejection of some clients.

#### 5.1.6 Species & Research

To date 7 fast growing species with a total 17 different provenances have been planted;

- *Acacia mangium* 3 provenances
- *Acacia auriculiformis* 1 provenance
- *Eucalyptus camaldulensis* 5 provenances
- *Eucalyptus tenitcornis* 5 provenances
- *Calliandra calothyrsus* 1 provenance
- *Gliricidia sepium* 1 provenance
- *Leucaena sp.* 1 provenance

A total of 9 slower growing natural species have also been planted in small numbers;

- *Anthocephalus chinensis* 1 provenance
- *Anthocephalus indicus* 1 provenance
- *Poinciana regia* 1 provenance
- *Alstonia scholaris* 1 provenance
- *Dipterocarpus macrocarpus* 1 provenance
- *Azelia xylocarpacea* 1 provenance
- *Cassia fistula* 1 provenance
- *Relomix regia* 1 provenance
- *Pterocarpus indicus* 1 provenance

It is still too early to judge the performance of the natural species in plantations. To date the credit line clients have shown no interest in them except for the planting of Teak in some areas. The clients investment decisions are strongly market driven and they have wanted to plant *Eucalyptus* because they view only this species as marketable. Unfortunately there is still little interest in *Acacia mangium*, because there is no established market, even though it has shown itself to be a most suitable species for farmer planting in the project area.

During 1996 the following trials were established in the PBPs

- Spacing trials
- Cultivation trials
- Species demonstrations



- Provenance trials
- Seed production stands
- Agro-forestry crops
- Chemical fertiliser trials
- Farmers' fertiliser trials
- Yield comparison of various techniques
- Economic comparison of various techniques

In this period the following trials were established in the PBPs ;

- cattle fodder-forestry trials
- Boron deficiency trials
- Permanent sample plots established to measure growth in 1995 plantings

These trials are being monitored and measured and results will be released through the Training & Extension Section of PCU.

### 5.1.7 Technical Aspects

Plantation records were updated for all PBPs. GPS was used to produce computer generated maps to update existing maps for all 1997 PBPs.

Technical reports were produced by the Team Leader on the following topics:

- Plantation Valuation
- Seed Production Strategy for *Acacia mangium* and *A. auriculariformis*.
- Symptoms of Plantation Nutrient Deficiency.
- Inspection Report on Part A Credit Plantations.
- Sub-project Extension to Champasak and Saravan Provinces.

### 5.1.8 Credit Planting

1997 was the first year that credit was available for client planting through the APB and a successful start was made to Part A of the project considering that this was a completely new activity to all actors and requiring a very high degree of co-ordination between APB-PAFO-PPCU-clients-nurseries. There were more than 2,000 ha of applications for STP services for Part A, after which 1,284 ha of STP certificates were approved, APB approved credit for 875 ha but only 785 ha are actually being established by the clients. There are 50 separate loans with a total value of Kp 242,955,000 (about \$ 252,000).

A total of 241 households are involved. Details are contained in the table below showing credits approved and then a second table showing actual plantation establishment by APB clients;

**APB Credits Approved by APB for 1997 Planting Year**

Province	No. Groups	No. individuals	Ha	Value Kp	Ave. ha
Vientiane Pref.	-	14	283	103,004,100	20.2
Vientiane Prov.	-	16	195	72,156,000	12.2
Bolikhamsay	17	2	224	63,939,000	11.7
Savannakhet	8	3	173	56,360,000	15.7
	<b>25</b>	<b>35</b>	<b>875</b>	<b>295,459,100</b>	

**Clients' Plantation Establishment for 1997 Planting Year**

Province	No. Groups	No. individuals	Ha	Value Kp	Ave. ha
Vientiane Pref.	-	10	211	69,477,000	21.1
Vientiane Prov.	-	13	156	60,938,000	12.0
Bolikhamsay	17	2	245	55,360,000	12.9
Savannakhet	7	1	173	57,180,000	21.6
	<b>24</b>	<b>26</b>	<b>785</b>	<b>242,955,000</b>	

Seven private enterprises wanted to apply for over 1,500 ha of loans when the credit line was first opened in late 1996. No APB creditlines were granted to any enterprises by APB because the enterprises concerned; had taken too much credit, were not profitable enough or, had their collateral mortgaged with other banks.

In the PAM it was assumed that clients would be either farmers or private enterprises but in processing clients it was found that there was a group who were neither. They are businessmen and salaried people working for government or private enterprises. This group is proving to be important but it has been difficult to categorise their loan conditions as they are neither farmers nor enterprises i.e. they use contractors and need similar funds per ha as an enterprise, but they do not have the resources of enterprises to assist farmers. It is recommended that the Mid Term Review discussions cover this.

PCU /PPCU and specialists brought APB clients and nurseries together and drafted contract forms for seedling supply. The PCU imported high quality bulk seed for all clients and sold it at cost to nurseries that had contracts to supply clients. Nursery supervision was done on behalf of the clients by PCU /PPCU assisted by the specialists.

Since the formulation of the Lao-ADB Plantation Forestry Project started in 1991-92 there have been a number of developments occurring in Lao PDR that were not clear at the project appraisal stage. The main ones are; availability of land, improving transport conditions and development of markets. Because of these factors PCU proposed and the consultant supports that the project be extended to the southern provinces of Champasak and Saravan. Justification is that these two provinces with lower population pressures, good soils, adequate rainfall, ready market and supportive provincial administrations are ideal for inclusion into the project. Unlike other provinces in the project the market is fully established. The DAFI integrated timber mill near Pakxe is already in production. They offer \$35 per tonne for standing plantations, this is by far the best price in Lao PDR and better than farmers can get in Thailand. The mill is now using natural timber from development works but these will soon be completed. GOL policy is that the mill must rely on plantation wood for it's raw material therefore a credit line and technical extension are most urgently needed to support the plantation expansion required. This proposal will be discussed at the Mid Term Review in August.

#### **5.1.9 Markets**

There are small markets for plantation wood existing but because there are no developed Lao markets it is making clients lack confidence in plantation investment using borrowed funds. This has had some effect on the demand for APB credit.

To date two companies have issued wood purchase agreements to project clients covering Vientiane Province and Vientiane Prefecture. A third company which is setting up a wood processing industry in Vientiane Province issued a very inadequate purchase agreement that could not be used. It is recommended to approach that company again as some time has gone by and they may now think differently.

DAFI have recently verbally agreed to issue a wood purchase agreement for Savannakhet, Saravan and Champasak. It is recommended that this be followed up.

A new plantation company based in Khammoune Province has recently signed a MOU with GOL and it is recommended that it be approached to provide a wood purchase agreement for Bolikhamsay, Khammoune and Savannakhet Provinces.

#### **5.1.10 Project Contacts**

There have been meetings and working sessions with other projects, businesses and organisations in Lao PDR who are doing work that connects with this project. These project contacts have been with;

- International Finance Corporation to discuss wood marketing and farmer credits in other countries to get fresh ideas for this project.
- Caisse Francaise de Developpement to discuss a possible contribution to assist the project.
- BGA Lao Plantation Forestry Ltd. (GF Brierley N.Z.) to discuss the impact of STP and environmental protection requirements on large plantation companies.
- Lao Survey and Exploration Services Co. Ltd. to find out what aerial reconnaissance resources are available in country.
- Skanska Civil Engineering AB to discuss their plan for secondary road improvement in Bolikhamsay and Vientiane Provinces.
- FOMACOP project, conservation sub-project to understand the requirements and land use recommendations for buffer zones of national biodiversity conservation areas.
- DAFI government enterprise about wood purchase for project.
- Non Timber Forest Products Project to enquire about the project's findings.
- Lao-Japan Forestry Co-operation Project to exchange experiences about community forestry and land use survey.
- CUSO to get NGO's perspective on plantation forestry..
- Forages for Smallholders Project for seed supply for forage-forestry demonstration in PBPs.
- CSIRO Tree Seed Centre for information on Acacia seed production areas in PBPs.

## **5.2 Environmental Monitoring**

### **5.2.1 Reports**

The Environmental Monitoring System for the project has been developed and is fully functional. It has now been fully integrated with the BME. It consists of; ( i ) the Environmental Baseline Surveys (EBS) which establish the original environmental conditions at each site, ( ii ) Environmental Monitoring Surveys (EMS) which measure the changes after establishing plantations, and ( iii ) Environmental Monitoring Reports which compare environmental changes with the original EBS on an annual basis.

The "1996 Environmental Baseline Survey Report" has been completed. Also a report describing and specifying all these environmental activities called "The Environmental

Monitoring System" report has been completed. Both have been sent to ADB in April 1997.

### **5.2.2 Surveys**

Environmental Baseline Surveys for 1997 PBPs have been completed. Detailed soil description and soil samples for laboratory analysis were taken from all existing PBPs by PCU/ PPCU.

Monitoring of PBPs and PFPs has to date shown no cause for concern regarding environmental damage caused by these plantation operations. The "Preliminary Environmental Guidelines" issued by the project have proved satisfactory so far for protection purposes.

In his "Environmental Baseline Survey Report" written during 1996 the Environmental Specialist noted a few PBP situations that he recommended needed to be monitored carefully as there may be potential for some environmental damage. However nearly a year later in mid 1997 the Environmental Specialist was satisfied that there were no problems evident.

Farmers and clients in their own plantations have generally complied with the "Preliminary Environmental Guidelines" but there are a few instances where these have not been followed fully. It is recommended that PPCU visit every site with the client before land clearing starts and specify any environmental protection action needed. And that the environmental guidelines topic within the extension message be re-assessed and emphasised.

### **5.2.3 Training**

Extensive training by the environmental specialist has been provided to PCU and PPCU staff on the following topics;

- environmental awareness
- environmental data collection
- integration of socio-economic and environmental data
- environmental data processing
- environmental data analysis and evaluation
- environmental reporting
- biodiversity and environmental monitoring
- development of environmental mitigation measures

## **5.3 Nursery Operations**

### **5.3.1 Nursery Seedling Production**

The nursery production required for the project has increased in large steps. In 1995 a total of 122,505 seedlings were produced in 2 nurseries; in 1996 a total of 429,184 seedlings were produced in 4 nurseries and in this 1997 reporting period a total of 2,010,090 seedlings were produced in 14 nurseries.

A mixture of nursery types have participated; private enterprises, PAFO, DAFO and individuals growing for themselves.

PCU /PPCU brought APB clients and nurseries together and supplied contract forms for seedling supply. The PCU imported high quality bulk seed for all clients and sold it at cost to nurseries that had contracts to supply clients. Nursery supervision was done on behalf of the clients by PCU /PPCU assisted by the specialists.

The table on the next page shows all seedlings produced for the project for Part A and Part B;

## Seedlings Distributed in 1997

Province & Nursery	Species	Provenance	No. Seedlings
<b>Credit Plantations (Part A)</b>			
Vientiane Pref. (Soukprasuth Nsy.) (Khanthaly Nsy.)	E. camaldulensis	Laura River	223,244 <u>70,000</u> 293,244
Vientiane Prov. (Keo Udom Nsy.) (Army Nsy.)	E. camaldulensis	Laura River	50,000 <u>161,636</u> 211,636
Bolikhamsay (Enterprise #3 Nsy.) (Muang Mai Nsy.) (Hua Hee Nsy.) (Kamphoun Nsy.) (Sai Samon Nsy.)	E. tereticornis    A. mangium	Mitchell River    Upper Aramea	42,750 89,725 13,600 159,471 <u>24,050</u> 329,596
Savannakhet (Km 4 Nsy) (Sod Nsy) (BAF Co. Nsy.)	E. camaldulensis	Laura River	50,000 200,000 <u>237,132</u> 487,132
<b>Subtotal - Part A</b>			<b>1,321,608</b>
<b>PBPs &amp; PFPs (Part B)</b>			
Vientiane Prov (Ban Bua Nsy)	E. tereticornis Cassia fistula Relomix regia	Laura River Lao Lao	98,050 500 <u>500</u> 99,050
Vientiane Pref. (Ban Bua Nsy)	E. tereticornis A. mangium Cassia fistula Relomix regia	Laura River Upper Aramea Lao Lao	216,450 5,550 500 <u>500</u> 223,000
Bolikhamsay (Enterprise #3 Nsy)	E. tereticornis E. tereticornis A. mangium A. auriculiformis Cassia fistula Relomix regia Calliandra calothyrsus Gliricidia sepium	Mitchell River Kennedy River Upper Aramea PNG Lao Lao Retalhuleu ex Bali } 115690 }	61,050 48,606 9,350 9,250 300 100 <u>6,666</u> 135,322
Savannakhet (BAF Co.)	E. tereticornis A. mangium A. auriculiformis Calliandra calothyrsus Leucaena sp. Gliricidia sepium Anthocephalus indicus	Kennedy River Kapal Village PNG Retalhuleu ex Bali Australia 115690 Lao	204,722 11,472 9,250 1,481 1,481 1,482 <u>1,222</u> 231,110
<b>Subtotal - Part B</b>			<b>688,482</b>
<b>Total all seedlings for 1997</b>			<b>2,010,090</b>

### 5.3.2 Training and Supervision

Two training courses about nursery technical methods, of 3 days each, were held in Bolikhamsay and in Vientiane Provinces for all participating nurseries of Part A and Part B. A total 31 people participated.

During frequent nursery operations supervision by PCU and specialist it was apparent that all nurseries, except 2, were performing well with no serious problems being encountered. But 2 nurseries contracting for Part A clients performed poorly and they relied heavily on involvement by PCU and specialist to produce seedlings suitable for planting. In both cases only the nursery owners attended the training and they were not fully involved in day to day nursery activities. It is recommended that in future PCU /PPCU insist that at least 2 persons involved in the nursery daily work as well as the owner must attend training. To improve quality control it is recommended that only nurseries previously approved by PCU be allowed to sign contracts with APB clients. This must be in APB /PPCU's extension message, otherwise quality control will be lost. Some PPCUs were not supervising their participating nurseries often enough.

## 5.4 Roothing

### 5.4.1 Works Completed

Because actual location of PBPs was closer to existing roads than envisaged at appraisal time the PCU needed only the construction of 4 roads with a total length of 15.7 km and one bridge to gain access. Survey and design contracts were tendered, awarded and completed for each civil work and then the tendering and awarding of the construction contracts was done. 2 of these works were completed during 1996. The 3 remaining construction road works at: Phon Sim, 7.94 km; Song Khon Mai, 2.40 km and Na Kha, 3.37 km with a total length of 13.71 km were completed in mid February 1997 during this reporting period.

A summary of all roads now completed so far appears the table below;

**Access Roads Completed**

No.	Works Name	Province	Km	Contract Value \$
RC-01	Phon Sim Road	Savannakhet	7.9	118,307
RC-02	Song Khon Mai Road	Bolikhamsay	2.4	37,925
RC-03	Na Kha Road	Vientiane Pref.	3.4	67,278
RC-04	Phon Tong Road	Vientiane Prov.	2.0	42,650
BC-03	Nam Souang Bridge	Vientiane Pref.	—	28,400
All	survey & design	All		10,584
	GOL contribution			<u>10,787</u>
			<b>15.7</b>	<b>\$ 315,931</b>

### 5.4.2 Survey & Design for Additional Works

As agreed during the ADB Review of 6-14 November 1996, the PCU with assistance of provincial authorities reviewed rooothing for rural development purposes and sent a proposal to ADB for an additional 39 km of road construction /rehabilitation. A summary of these proposed roads appears below;

**Proposed Access Roads**

No.	Road Name	Province	Estim.Km	Estimated Value \$
RC-06	Nongkhiat-Pakngan	Vientiane Pref.	17	204,000
RC-07	Muk-Koua	Vientiane Prov.	10	220,000
RC-08	Si-Savat	Bolikhamsay	3	66,000
RC-09	Song Khon Kao	Bolikhamsay	4	81,000
RC-10	Savang-Xong	Savannakhet	<u>6</u>	132,000
All	survey & design	All		<u>25,000</u>
			<b>39</b>	<b>\$ 728,000</b>

**5.4.3 Survey & Design Contracts**

The 5 survey and design contracts for RC-06 to RC-10 (see table above) have been tendered and awarded during April - May 1997. Three have been completed and the remainder will be completed by end July 1997. The schedule for these proposed roads is for the works to be constructed between November 1997 and March 1998. This will result in a total of 9 roads of approximately 55 km total length and 1 bridge with a estimated total expenditure of about \$ 1,044,000.

**5.4.4 Time Exchange - Engineer for Forest Operations Specialist**

The Road Engineer time allocation for the project was finished in February 1997, the Plantation Operations Specialist has a balance of 3.97 months left.

It has been proposed by DOF, supported by the Team Leader and agreed to by the Consultant that the balance of Plantation Operations Specialist's time be allocated to the Road Engineer. The existing fee rate for the Plantation Operations Specialist will be used for the Road Engineer so that there are no budget changes involved for this proposal which will be discussed at the coming Mid Term Review.

Justification is that the PBPs and PFBs have now been completed and the Plantation Development Section has shown itself to be capable to supervise and train plantation operations. It is clear that the Plantation Operations Specialist has carried out his tasks well and is now no longer critical to Part A. The Team Leader / Plantation Management Specialist will be able to provide any assistance required from now on.

A much more critical requirement for the PCU now is the engineering supervision of approximately 39 km of rural road construction in 5 packages. These are scheduled to start in November 1997 and finish about 4 months later. The works have a combined estimated value of about \$720,000.

## 6. EXPENDITURE

### 6.1 Local Expenses

The report for international and local expenditure by the consultancy specialists of the project is in the two tables below. These expenditure reports cover the implementation specialists expenditure only and does not include expenditure made by the consultant's home office. The expenditure summary to the end of the fourth reporting period on 30 June 1997 follows;

<b>Local out of Pocket Expenses (US\$)</b>			
Item	Total Budget	Total Spent	Budget balance
Per Diem (field)	39,801	22,806.59	16,994.41
Per Diem (Vientiane)	10,968	3,950.00	7,018.00
DSA	13,306	4,767.02	8,538.98
Domestic air Travel	7,910	376.76	7,533.24
Transport	17,643	6,918.19	10,724.81
Communication	9,898	4,988.34	4,909.66
Housing	38,989	26,458.70	12,530.30
Local support staff	27,852	14,707.21	13,144.79
Office supply	<u>5,946</u>	<u>1,183.53</u>	<u>4,762.47</u>
	<b>172,313</b>	<b>86,156.34</b>	<b>86,156.66</b>

### 6.2 International Expenses

<b>International out of Pocket Expenses (US\$)</b>			
Item	Total Budget	Total Spent	Budget balance
International Travel	38,825	13,452.99	25,372.01
Miscellaneous Travel Exp.	3,909	4,287.77	(378.77)
Per Diem out of Lao	2,798	1,500.00	1,298.00
Communications	5,108	411.43	4,696.57
Reproduction reports	9,835	2,003.54	7,831.46
Miscellaneous	<u>1,095</u>	<u>92.38</u>	<u>1,002.62</u>
	<b>61,570</b>	<b>21,748.11</b>	<b>39,821.89</b>



## 7. IMPLEMENTATION PLANS FOR NEXT PERIOD

The proposed work plans for the next 6 month reporting period, starting from 1 July through to 31 December 1997 for each implementation specialist is as follows;

### 7.1 Team Leader / Plantation Management Specialist

- July Prepare fourth 6 month report. Prepare the GOL-ABD Mid Term Review report and finalise associated documents with NPD. Work with Environmental specialist and field visits with him. Follow up with PCU the finish of Part A and Part B planting. Take part in CIRAD-Forêt regional and head office inspection of project implementation.
- Aug. Take part in the GOL-ABD Mid Term Review. Check weeding and fertilising operations. Assist PCU to review extension message. Assist PCU /APB with the implementation of 1998 Part A clients recruitment. Assist PCU with training and organisation for new sub-projects.
- Sept. Assist PCU /APB with the implementation of 1998 Part A clients recruitment. Assist PCU with training and organisation of new sub-projects. Leave 2 weeks.
- Oct. Check weeding of 1997 plantations with PPCUs. Assist PCU /APB with the implementation of 1998 Part A clients recruitment. Initiate planning and qualification checks of participating nurseries for 1998 clients' seedling production.
- Nov. Review plans and materials for 1998 training for clients, nurseries and 2 new PPCUs. Order seed as required for 1998 seedling production. Organise PSPs for 1996 plantings and trial evaluations.
- Dec. Assist PCU /APB with the implementation of 1998 Part A clients' credit line.

### 7.2 Environmental Specialist

- Oct. Training for PCU, PPCU, PAFO, DAFO in environmental protection and conservation in APB client tree plantations. Extra training of 2 new PPCUs.

### 7.3 Road Construction and Maintenance Engineer

- Nov. Supervision and quality testing of on-going civil works; contracts # RC-06, RC-07, RC-08, RC-09 and RC-10.
- Dec. Supervision and quality testing of on-going civil works; contracts # RC-06, RC-07, RC-08, RC-09 and RC-10.

### 7.4 Plantation Operations Specialist

Balance of 3.97 months is proposed to be given to Road Engineer and therefore the work time of this specialist will be finished.

### 7.5 Nursery Operations Specialist

The work time of this specialist is finished.