

Environmental Monitoring Report

Semiannual Report
Jan to June 2019

Lao PDR: GMS BIODIVERSITY CONSERVATION CORRIDORS PROJECT

Prepared by GITEC Consult GmbH Cologne, (GITEC) Fed. Rep. of Germany for the Division of Protected Area Management, Department of Forestry, Ministry of Agriculture and Forestry and the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 1 July 2019)

Currency unit – KIP(LAK)

LAK1.00 = \$0.000115

\$1.00 = LAK8680

ABBREVIATIONS

ADB	Asian Development Bank
ANR	Assisted Natural Regeneration
BCC	Biodiversity Conservation Corridor
DAFO	District Agriculture and Forestry Office
DoNRE	Department of Natural Resources and Environment
DCO	BCCP- District Coordination Office
EARF	Environmental Assessment and Review Framework
EMP	Environmental Management Plan
EPL	Environmental Protection Law
FIP	Forest Investment Program
GIC	BCCP – Grant Implementation Consultant (GITEC Consult)
GMS	Greater Mekong Subregion
GoL	Government of Lao PDR
IC	Infrastructure Consultant (Fraser Thomas Partners)
IEE	Initial Environmental Examination
MAF	Ministry of Agriculture and Forest
MoNRE	Ministry of Natural Resources and Environment
NPMO	BCCP - National Project Management Office
PAFO	Provincial Agriculture and Forestry Office
PPMO	BCCP - Provincial Project Management Office
SPS	Safeguard Policy Statement
VDF	Village Development Fund

NOTE

- (i) In this report, "\$" refers to US dollars.

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LAO PEOPLE'S DEMOCRATIC REPUBLIC



DIVISION OF PROTECTED AREA MANAGEMENT
DEPARTMENT OF FORESTRY
MINISTRY OF AGRICULTURE AND FORESTRY

Grant Nos. 0242-LAO-(SF) & 0488-LAO-(SCF)

GMS BIODIVERSITY CONSERVATION CORRIDORS PROJECT

Financed through
Asian Development Bank (ADB)

Environmental Monitoring Report

July 2019

GITEC Consult GmbH
Cologne, (GITEC)
Fed. Rep. of Germany

and

Pacific Rim Innovation and
Management Exponents, Inc.
(PRIMEX), Philippines

in association with
LAO Consulting Group Ltd., Lao PDR

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ບົດສະຫລຸບຫຍໍ້

ອີງຕາມແຜນການຄຸ້ມຄອງແລະຕິດຕາມທາງດ້ານສິ່ງແວດລ້ອມທຳມະຊາດ(EMP) ຂອງໂຄງການ BCC+FIP-GMS ພາຍໃຕ້ລະບຽບການແລະມາດຕະຖານຂອງຜູ້ໃຫ້ທຶນກໍ່ຄື ADB ທີ່ເນັ້ນໜັກໃນການດຳເນີນການຕິດຕາມກວດກາຜົນກະທົບທາງສິ່ງແວດລ້ອມແລະສັງຄົມ ທີ່ອາດຈະເກີດຂຶ້ນຈາກກິດຈະກຳຂອງໂຄງການ. ເຊິ່ງທີມງານຄຸ້ມຄອງໂຄງການຂັ້ນສູນກາງ ພ້ອມກັບທີມງານທີ່ປຶກສາທາງດ້ານເຕັກນິກວິຊາການ ແລະສິ່ງແວດລ້ອມ ໄດ້ດຳເນີນການຕິດຕາມກວດກາຄວາມຄືບໜ້າຂອງໂຄງການທາງດ້ານເຕັກນິກວິຊາການກໍ່ສ້າງ, ການຊຸກຍູ້ຜື້ນຜູ້ຊີວິດການເປັນຢູ່ຂອງຊຸມຊົນ, ການສະຫງວນພື້ນທີ່ປ່າໄມ້ ແລະ ຜົນກະທົບທາງສິ່ງແວດລ້ອມໃນຊ່ວງ ເດືອນ ມັງກອນ ເຖິງ ເດືອນ ມິຖຸນາ 2019.

ທີມງານຂັ້ນສູນກາງແລະທີ່ປຶກສາໄດ້ມີການປະສານສົມທົບກັບໜ່ວຍງານຄຸ້ມຄອງໂຄງການຂັ້ນແຂວງ ແລະເມືອງເພື່ອປຶກສາຫາລື ແລະຮັບຟັງການລາຍງານ ແລະ ການສະໜອງຂໍ້ມູນ ຂອງຫ້ອງການຄຸ້ມຄອງໂຄງການຂັ້ນແຂວງ ແລະ ຫ້ອງການປະສານງານຂັ້ນເມືອງ; ໃຫ້ມີສ່ວນຮ່ວມໃນການລົງຕິດຕາມກວດກາຄວາມຄືບໜ້າຂອງໂຄງການແລະສະພາບເງື່ອນໄຂສິ່ງແວດລ້ອມໃນຊ່ວງຫົກເດືອນຕົ້ນປີ 2019. ໃນການລົງຕິດຕາມຂອງທີມງານທີ່ປຶກສາໃນຄັ້ງນີ້ແມ່ນເພື່ອຕິດຕາມຜົນການຊຸກຍູ້ໃຫ້ຂັ້ນແຂວງ ແລະ ເມືອງ ໃນວຽກງານການຕິດຕາມກວດກາທາງດ້ານສິ່ງແວດລ້ອມ ໃນຊ່ວງ ຫົກເດືອນທີ່ຜ່ານມາ, ເຊິ່ງເຫັນໄດ້ວ່າຍັງມີສ່ວນວ່າງໃນການດຳເນີນວຽກງານຕິດຕາມເນື່ອງຈາກຍັງຂາດການວາງແຜນງົບປະມານ ຂາດການປະສານສົມທົບໃນແຕ່ລະຂັ້ນຂອງສາຍງານ ຂາດການເອົາໃຈໃສ່ການຕິດຕາມເງື່ອນໄຂສິ່ງແວດລ້ອມ ແລະ ຍັງຂາດສິ່ງອຳນວຍຄວາມສະດວກລົງພາກສະໜາມ, ສິ່ງດັ່ງກ່າວ ເປັນຜົນໃຫ້ຂາດເຂັ້ມຂົ້ມປະກອບບົດລາຍງານເງື່ອນໄຂທາງດ້ານສິ່ງແວດລ້ອມ.

ການລົງຕິດຕາມໃນຄັ້ງນີ້, ທີມງານຕິດຕາມໄດ້ລົງຜືນທີ່ທັງໝົດ 4 ເມືອງ ໃນ 3 ແຂວງ ຄື ແຂວງ ຈຳປາສັກ(ເມືອງປະທຸມພອນ), ແຂວງ ອັດຕະປື(ເມືອງ ສະໜາມໄຊ ແລະ ພູວິງ) ແລະ ແຂວງ ເຊກອງ(ເມືອງດາກຈິງ). ການລົງຕິດຕາມແມ່ນສຸມໃສ່ບາງຈຳນວນໂຄງການທີ່ມີກິດຈະກຳທີ່ແຕກຕ່າງເຊັ່ນ: ກິດຈະກຳການກໍ່ສ້າງໂຄງລ່າງ ເຊັ່ນ: ຫ້ອງນໍ້າ, ເສັ້ນທາງ, ການປົກປ້ອງ ແລະ ການຜືນຜູ້ປ່າໄມ້ແບບທຳມະຊາດ, ຕໍ່ເຕີມສຸກສາລາ, ແລະ ຕິດຕັ້ງລະບົບນໍ້າບາດານ. ກິດຈະກຳການຜືນຜູ້ການດຳລົງຊີວິດຂອງຊຸມຊົນລວມມີ ການລ້ຽງສັດ, ການປູກຜັກສວນຄົວ, ແລະ ການກະກຽມນາເຂົ້າ. ຜົນການລົງຕິດຕາມທາງດ້ານສິ່ງແວດລ້ອມຈາກກິດຈະກຳຂອງໂຄງການເຫັນວ່າຜົນກະທົບໂດຍກົງຕໍ່ສິ່ງແວດລ້ອມອ້ອມຂ້າງແມ່ນມີໜ້ອຍ ຫາປານກາງ ເນື່ອງຈາກເປັນກິດຈະກຳຂະໜາດນ້ອຍ ແລະເປັນໂຄງການທີ່ປັບປຸງໂຄງລ່າງທີ່ມີຢູ່ແລ້ວ, ເປັນກິດຈະກຳທີ່ຜືນຜູ້ຊີວິດການເປັນຢູ່ພາຍໃນຄອບຄົວ, ເປັນການສະຫວ່າງພື້ນທີ່ປ່າແບບທຳມະຊາດ ແລະເປັນໂຄງການທີ່ຜືນຜູ້ພື້ນທີ່ທີ່ມີຢູ່ໃຫ້ສາມາດພັດທະນາເປັນປ່ານຳໃຊ້ໄດ້ ແຕ່ຖ້າຂາດການຕິດຕາມກວດກາ ແລະ ແນະນຳມາດຕະການແກ້ໄຂຕໍ່ຜົນກະທົບທາງສິ່ງແວດລ້ອມແບບຕໍ່ເນື່ອງກໍ່ອາດຈະເກີດຜົນກະທົບໃນທາງອ້ອມແລະຕໍ່ໜ້າໄດ້ເຊັ່ນກັນ.

ອີງຕາມການທົບທວນຜົນໄດ້ຮັບຈາກການດຳເນີນກິດຈະກຳຜ່ານມາ, ຄຸນນະພາບຂອງການກໍ່ສ້າງທາງ ແລະ ການຕິດຕັ້ງຂອງບາງໂຄງການຍ່ອຍແມ່ນຍັງບໍ່ທັນສອດຄ່ອງກັບການອອກແບບທີ່ຮັບຮອງລວມທັງການປັບປຸງເສັ້ນທາງແລະການຕິດຕັ້ງລະບົບນໍ້າໃຊ້ຄົວເຮືອນ, ເຊິ່ງຕ້ອງໄດ້ຕິດຕາມກວດກາຈາກ PPMOs ກ່ອນການກວດສອບສຸດທ້າຍ ແລະກ່ອນມອບໂຄງການໃຫ້ຊຸມຊົນທ້ອງຖິ່ນ. ຍັງຂາດການເອົາໃຈໃສ່ຕໍ່ການປ້ອງກັນການບຸກລຸກປ່າສະຫງວນຈາກການຂະຫຍາຍການປູກຝັງ, ປະຈຸບັນຄະນະກຳມະການຂັ້ນແຂວງຖືກມອບໝາຍເພື່ອສັງລວມເຫດການແລະຄົ້ນຄວ້າມາດຕະການຫຼຸດຜ່ອນໂດຍມີສ່ວນຮ່ວມຈາກຂະແໜງການທີ່ກ່ຽວຂ້ອງ ແລະ ຜູ້ຂະຫຍາຍການປູກຝັງ. ແຜນງົບປະມານ 10% ທີ່ຍັງເຫຼືອຈະໄດ້ຮັບການຊີ້ແຈງຢ່າງເປັນທາງການຕໍ່ ອຳນາດການປົກຄອງທ້ອງຖິ່ນແລະ ປະຊາຊົນ.

ບັນຫາຫຼັກທີ່ກ່ຽວຂ້ອງຕໍ່ການຂາດຄຸນຂໍ້ມູນແລະບົດລາຍງານການຕິດຕາມຄວາມຄືບໜ້າຂອງໂຄງການ ແລະ ບົດລາຍງານທາງສິ່ງແວດລ້ອມ, ຂາດຄວາມຕໍ່ເນື່ອງໃນການຕິດຕາມພາກສະໜາມຕໍ່ບັນສິ່ງແວດລ້ອມ ແລະບໍ່ມີການບັນທຶກຕາມແບບຟອມຕິດຕາມ. ບັນຫາດັ່ງກ່າວຈະຕ້ອງມີການປັບປຸງໄດ້ກໍ່ຕໍ່ເມື່ອມີການວາງກອບໜ້າວຽກ ແລະ ງົບປະມານໃນການຕິດຕາມກວດກາໃຫ້ແທດເໝາະກັບກິດຈະກຳໂຄງການຂອງແຕ່ລະແຂວງ,ເມືອງ ແລະ ບ້ານ ໂດຍສະເພາະໃຫ້ສອດຄອງກັບມາດຕະການທີ່ກຳນົດໄວ້ໃນລະບຽບການຂອງຜູ້ໃຫ້ທຶນກໍ່ຄື ເອດີບີ, ໃຫ້ມີການປະສານງານກັບທຸກຂະແໜງການທີ່ກ່ຽວຂ້ອງ ແລະຈະຕ້ອງມີພະນັກງານຕິດຕາມທີ່ມີຄວາມຊຳນານສະເພາະດ້ານໃນການກວດກາທາງດ້ານເຕັກນິກວິຊາການສິ່ງແວດລ້ອມຕື່ມອີກ.

I. Executive Summary

The BCCP Environmental Assessment and Review Framework (EARF)¹ prepared in accordance with ADB's Safeguards Policy Statement² contains the requirements for environmental monitoring of the potential environmental and social impacts of the project's activities. Staff from the National Project Management Office (NPMO) along with the Grant Implementation Consultant (GIC) (technical and environmental specialists) undertook a review of the potential environmental impacts from the implementation activities for the period from January to June 2019.

A Consultant Team consisting of the National Environmental Safeguards Specialist (NESS) appointed under the GIC, and NPMO technical staff, coordinated with the Provincial Project Management Offices (PPMOs) and District Coordination Offices (DCO) to review and update environmental compliance from the records and reports maintained during project implementation. This was the 5th mission undertaken by the Consultant Team. Again the mission encouraged the provincial and district authorities to monitor environmental aspects in the field during implementation by following up on the earlier training the NESS had provided. The results from the mission showed a lack of progress in recording and regularly reporting of environmental monitoring information.

During this review, the Team visited four districts in three provinces i.e. Champasak Province (Pathoumphone district), Attapeu (Sanamxay and Phouvong District) and Sekong (Dakcheung District). Monitoring focused on the various infrastructure sub-projects including improved access roads, construction of bathrooms / toilets and water supply systems, the forest conservation activities – planting, ANR, patrolling and the livelihood program including providing livestock, household gardening, village fund, paddy field development and grass planting (forage development)

Environmental monitoring results from the project activities indicated that the immediate environmental impact is low but with a potential for moderate indirect impact in the longer term. This is because the Project's activities have included only small-scale infrastructure, household level of livelihoods programs, natural regeneration and forest conservation programs. However, as continuous monitoring or follow-up of on-going operation and maintenance (O&M) is not being carried out, adverse impacts are likely to occur during the operation period.

During the review period, the quality of the technical construction and installation of some sub-projects was observed to still not comply with the approved designs. These included road improvement projects where inadequate running surfaces, shaping and drainage were observed and water supply systems which were not functioning and which should have been confirmed as fully compliant before Contract Acceptance by the PPMOs. The PPMOs have been negligent in their duty in ensuring the works meet the BoQ and standards before making payments and handing over to the local communities. As a consequence the Project has had to spend additional funds rectifying the mistakes made in some projects and walk away from others leaving them operational but below expected standard. The 10% contract sum retained on 6 "sub-standard" sub-projects has been used to fund the remedial works in others.

¹ EARF – Updated March 2016

² SPS - 2009

One issue reported during the mission was the encroachment of agriculture (cassava) into conservation forest areas under BCC-GMS ANR support in 6 villages in Pathoumphone district. This activity is in violation of the agreed PLUPs and a provincial committee has subsequently been assigned to fully investigate and initiate the appropriate legal proceedings against the perpetrators. The blatant disregard of the accepted conservation agreements and poor enforcement by the district and province is a serious weakness and embarrassment for the Project. Steps to ensure restoration of the affected land areas is being taken by the province with the support of the Project.

Key issues have been observed with data disparities and late sharing of progress reports and environmental monitoring reports. There is a systemic problem with complacency of the district and provincial officials and communities towards reporting conservation and environment problems. This needs to be improved at each level (the province, district and village) in order to comply with donor requirements. It is not a question of budget or work planning as funds are available for these activities (including patrolling and reporting at village level) but rather in not taking actions immediately violations eg encroachment are identified.

II. PROJECT OVERVIEW, GENERAL SAFEGUARD MATTERS

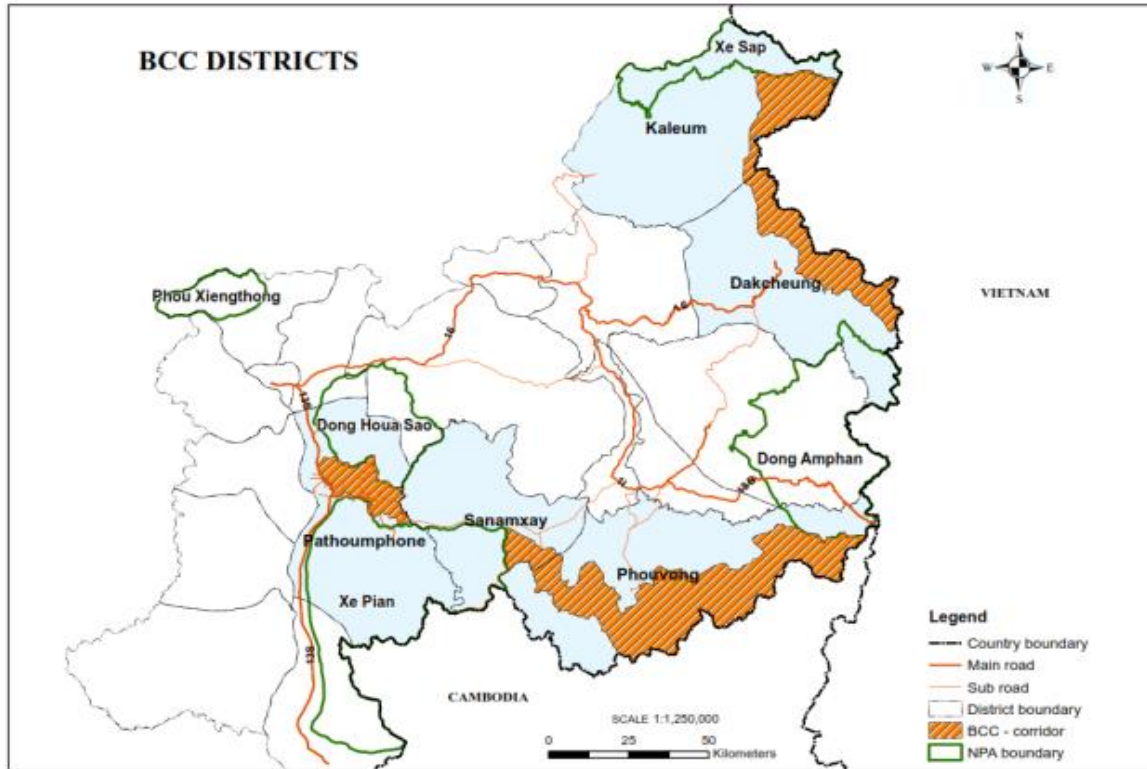
2.1 Project Overview

ADB signed a grant agreement [Grant 0242 Lao (SF)] in 2011 with the Lao PDR government to provide \$20 million under ADB-GMS funding for the Lao component of the Greater Mekong Sub-region Biodiversity Conservation Corridors Project (BCCP). In 2016, ADB signed a further grant agreement [Grant 0488 Lao (SCF)] for additional financing (AF) of \$12.84 million funded under the Forest Investment Program for BCCP.

The objective of the Project is to establish sustainably managed biodiversity corridors linking four National Protected Areas (NPAs) in the three southern provinces of Champasak, Attapeu and Sekong (see Figure 1). Project activities include not only support for afforestation and forest protection, but also efforts to improve villager livelihoods and provision of small-scale village infrastructure. Under BCC-GMS, activities are being implemented in 65 villages in five districts (Pathoumphone in Champasak; Sanamxay and Phouvong in Attapeu; and Dak Cheung and Kaleum in Sekong).and under BCC-AF, 17 villages in Phouvong and Dak Cheung.

In Grant Covenant - Schedule 4, para. 2, it states that: “the Recipient shall ensure that the Project facilities are constructed and operated in compliance with the Recipient’s applicable environmental laws and regulations and ADB’s Safeguard Policy Statement (2009), and that no Subproject with significant adverse environmental impacts is financed under the Project. In particular, the Recipient shall ensure that Subprojects are carried out in accordance with environmental assessment procedures provided in the environmental assessment and review framework (EARF), and the respective sub-project environmental management plans as agreed between the Recipient and ADB”.

Figure 1: Project Location



There are 11 types of infrastructure subprojects constructed under BCCP as shown in Table 1. The most requests were for community meeting halls (10), road improvement- access and internal village roads (11), school and kindergarten class rooms (11) and water supplies (13). All subprojects relate to improving community facilities.

Table 1: Type of Infrastructure Subproject

Number	Project Type	Number of Sub-Projects
1	Community Meeting Hall	10
2	Ford	1
3	Health Centers/Clinics	3
4	Paddy Development	2
5	Irrigation works	3
6	Road Improvement-Internal village	11
7	Road Improvement- Village access	6
8	Sanitation	3
9	School & Kindergarten rooms	11
10	Teacher/Patrolling house	2
11	Water supply	13
Total Sub-Projects		65

The feasibility studies, detailed designs and initial construction supervision (November 2016 to March 2017) were undertaken by Fraser Thomas Partners as infrastructure consultant (IC). As part of their services, training in environmental monitoring was conducted for the infrastructure

construction supervisors in November 2016 and in March 2017 for the Provincial Environmental Officers, appointed to report compliance in accordance with the Grant Covenant.

For each of the subprojects, a rapid environmental impact assessment was conducted during the feasibility studies and potential environmental issues and mitigation measures were included within an environmental monitoring and management plan (EMP). The environmental safeguards were included in the EMP for monitoring by the supervisors during the routine construction inspections. The EMPs were based on the actual site conditions for each sub-project. The results of the monitoring were to be regularly reported and include in the quarterly project progress reports.

The livelihoods development program under BCCP aims to improve the living conditions and incomes of households in all villages. The local authorities and villagers were trained by the consultant and national experts on the project implementation. Under BCC-GMS project, each village had selected its priority request for livelihood development which included livestock raising (chickens, goats, pigs), and economic cash crops (rice, vegetables, corn, spices). In addition, a village development fund (VDF) of \$5000 was established from which villagers can loan amounts to support extension of agricultural activities or other business development. As at November 2018, the livelihoods programme under BCC-AF (FIP) has begun activities in all 67 BCC-GMS villages.

The afforestation program includes activities which support planting (bare land and enrichment), assisted natural regeneration (ANR), conservation awareness raising, and patrolling to improve conservation and protection of forest resources in the corridors. Within this program, 44 target villages in the three provinces (25 villages in Sekong province, 11 villages in Attapeu and 8 villages in Champasak) are involved with the planting and ANR activities. This program is an important part of the objective to support the main GoL's goal to achieve 70% forest cover by the year 2020. As at the end of June 2019, 1,875 ha has been planted in mixed native conservation forest with 6,780 ha under ANR.

The patrolling program objective is to prevent and reduce illegal logging, hunting of wildlife and NTFP exploitation, and to maintain a register with evidence of perpetrators of such activities in the biodiversity corridor. Concentrating on 36 BCC priority villages in the five districts in three provinces, patrolling began in 2014 (for 07 villages in Attapeu, 14 villages in Sekong and 15 villages in Champasak). The balance BCC villages all commenced patrolling activities in subsequent years with the 17 BCC-AF commencing patrolling in 2018.

This report is the fifth environmental monitoring report (during January to June 2019) prepared by the Project, with the assistance of the GIC National Environmental Safeguards Specialist (NESS).

2.2 Project Progress

The progress of all activities under BCCP has been reported in the Q1 and Q2 Progress Reports, from January to June 2019.

Infrastructure Sub-projects

In total 65 infrastructure subprojects have been constructed under BCC-GMS in the 5 districts in the three Project Provinces. There is no infrastructure planned under BCC-AF apart from paddy

development as part of the agricultural support program and some rehabilitation of very small irrigation projects.

Construction started in May 2016 with 5 sub-projects with the balance starting in Nov 2016. Overall construction progress based on recent inspections is about 91% of the physical construction completed and reported as at June 2019. There are 59 subprojects completed with a further 6 pending remedial works to be undertaken in July and August 2019.

Champasak province has 21 subprojects, (completed 17, pending remedial works 04); Attapeu province has 22 subprojects (completed 22); Sekong province has 22 subprojects (completed 20, pending remedial works 2), as given in Table 2.

Table 2: Infrastructure Subproject construction status as at June 2019

Province	Project Type	Number of subprojects planned	Construction in progress	Completed, but additional work or remediation required	Fully completed
ATTAPEU	Community Meeting Hall	7	-	-	7
	Paddy Development	1	-	-	1
	Road Improvement - Internal Village	5	-	-	5
	Sanitation	1	-	-	1
	School & Kindergarten rooms	3	-	-	3
	Teacher / patrolling house	2	-	-	2
	Water Supply	3	-	-	3
ATTAPEU Sub-Total		22	0	0	22
CHAMPASAK	Community Meeting Hall	1	-	-	1
	Ford (Water course crossing)	1	-	-	1
	Health Centers / Clinics	1	-	-	1
	Irrigation Works	3	-	1	2
	Road Improvement - Internal Village	1	-	-	1
	Road improvement - Village Access	8	-	1	7
	School & Kindergarten rooms	4	-	-	7
	Water Supply	2	-	2	0
CHAMPASAK Sub-Total		21	0	4	17
SEKONG	Community Meeting Hall	2	-	-	2
	Health Centers / Clinics	2	-	-	2
	Paddy Development	1	-	-	1
	Road improvement - Village Access	3	-	-	3
	Sanitation	2	-	-	2
	School & Kindergarten rooms	4	-	-	4
	Water Supply	8	-	2	6
Sekong Sub-Total		22	0	2	20
TOTAL Sub-projects		65	0	6	59

The subprojects are designed and implemented in conformity with the local topography, environment and landscape, with potential environmental impacts monitored under the EMP by the responsible implementation staff of the project the local authorities.

The Afforestation Program

During this report period, tree planting has been conducted under the FIP program in 44 villages of Dakcheung and Phouvong district, and until June 2019 has covered 80 ha. The ANR program

has been conducted in 7 villages of Dakcheung and Phouvong district, with the area achieved of 1091ha exceeding the target of 1000 ha.

In Sekong Province, 25 ha of tree planting has been completed under BCC-FIP in 1 village in Dakcheung district. There are about 504 ha of ANR completed under BCC-FIP which included 5 villages of Dakcheung district.

In Attapeu Province, 55 ha of tree planting has been completed under BCC-FIP in 3 villages of Phouvong. There are 588 ha of ANR completed under BCC-FIP which included 2 villages of Phouvong district.

During this report period, there is no additional afforestation activity in Champasak Province. As reported, there were 8 villages in Pathoumphone district which completed ANR of 594.53 ha since June 2018.

Table 3: Forestry Program of BCC(GMS+FIP) Component, Sub-project status as at June 2019

BCC-GMS and BCC-FIP Afforestation Program Status 2019

Type	Province	District	Tree Planting				ANR				Total Area Planned (ha)	Total Achieved Area (Ha)	No Plot	Remarks
			Planned (ha)	Achieved (ha)	Balance (ha)	# Village	Planned (ha)	Achieved (ha)	Balance (ha)	# village				
BCC-GMS	Champasak	Pathoumphone	0	0	0	0	0	0	0	0	0	0	0	No activity in 2019
	Sekong	Dakcheung	0	0	0	0	0	0	0	0	0	0	0	No activity in 2020
		Kaleum	0	0	0	0	0	0	0	0	0	0	0	No activity in 2021
	Attapeu	Phouvong	0	0	0	0	0	0	0	0	0	0	0	No activity in 2022
		Sanamxai	0	0	0	0	0	0	0	0	0	0	0	No activity in 2023
Total GMS							0	0	0	0	0	0	0	
BCC-FIP	Sekong	Dakcheung		0	0	0	500	503.9	3.9	5	500	503.9	5	
		Dakcheung	25	25	0	1	0	0	0	0	25	25	1	
	Attapeu	Phouvong			0	0	500	588	88	2	500	588	2	
		Phouvong	55	55	0	43	0	0	0	0	55	55	43	
Total FIP			80	80	0	44	1,000	1091.9	91.9	7	1080	1171.9	51	

Updated:1 August 2019

Remark

Achieved 1171.9 ha
Target 1080 ha
Balance 91.9 ha over target
No of Village 51 Villages

The Livelihood Program

The 21 villages of Pathoumphone District, implemented mostly livestock raising, paddy rice improvement, local fruit planting, and house gardens. The 15 villages of Dakcheung District and 10 villages in Kaleum selected livestock raising, vegetable, ginseng and cardamom development activities. In the 24 villages in Attapeu (18 villages in Sanamxay District and 06 in Phouvong District), activities focused on livestock raising, house gardens and cardamom production.

Based on the monitoring result, the most progress programs of each province are (1) improving village access roads, home gardening, village funds, forest planting at Dakcheung district, Sekong province (2) paddy field preparing, sanitation (bathrooms and toilets), and water supply system at Phouvong and Sanamxay district, Attapeu province, and (3) expand the health center, water supply system, livestock providing and ANR at Pathomphone district.

The Patrolling program

Village patrol teams were established in all 67 Project villages in 2013/14 and basic training was provided in law enforcement and wildlife monitoring. Progress on protection of the natural resources in the corridors has included confiscation of illegal wood, wildlife traps/snares and vehicles used for illegal activities and the issue of warnings to perpetrators. a few issuing the fines and arrests made.

Success of the patrolling activities relies on reliable execution of activities, measuring, recording and reporting by the patrolling teams and follow-up by the districts. The selected high priority villages under BCC-GMS are provided with GPS equipped cameras for using on the monthly patrols and for the BCC-FIP villages, GPS and camera equipped tablets are provided for improved data transfer, monitoring and response. The number of priority BCC-GMS Villages in the patrolling program is given in Table 4.

Total number of warnings reported amount to 1110 cases in the project areas of BCC and FIP programs. In Champasak over 745 cases, in Attapeu over 74 cases and in Sekong over 291 cases were recorded.

Table 4: Number of Priority BCC-GMS Villages on Patrolling Program in Champasak, Sekong and Attapeu Provinces

Provinces	District	Name of villages	Remark
Champasak	Phathoumphone - 15 villages	15	Villages identified in biodiversity assessment
		KiatNgong	
		Houay Ko	
		Thopsok	
		Sanote	
		Thahou	
		Thongpha	
		LaoNgar	
		Somsouk	
		Nabone	
		Tavang	
		TaOng	
		Phalay	
		Khonthout	
		KengNanyOng	
		Kala	
Sekong	Kalum - 7 villages	14	In Kaleum district there is Arok-ariew village that includes Kalo village that is priority area for patrolling. So DPMO of Kaleum district requested for priority village for patrolling. So in Kaleum district there are 7 villages
		Kalo	
		Arok-Ariew	
		Chateu	
		Pala	
		Achinggagel	
		Tavang	
	Panone		
	Darkcheung - 7 villages	Daklan	In Daktaong village there are two groups (Daktaoknoy and Daktaokyai), In Dakdian-dakrou village there are two groups (Dakdian and Dakrou). So that in Dakcheung district there are 7 villages for priority villages to patrol
		Dakdian-Dakrou	
		Dakrou	
		DaktaOng (Daktaoknoy)	
		Daktaokyai	Villages identified in biodiversity assessment
		DakDom	
Dakmam			
Attapeu	Phouvong - 3 villages	7	Villages identified in biodiversity assessment
		Phouyang	
		NamSouan	
	Sanamxay - 4 villages	Lamong	These three villages proposed by District
		NamKong-TaNgao	
		Sompoy	
		PhonsaAt	
HadOudon			
Total no. priority villages		36	

2.3 Environmental Monitoring Implementation Arrangements

The National Project Management Office (NPMO) is responsible to provide the budget to the Provincial Project Management Office (PPMO), for project implementing and management as per the PPMO implementation plans which there had developed by assistance from the GIC. NPMO is also responsible to support and supervise the PPMO for project monitoring under the related documentations, EMP and RP, etc and to ensure that environmental safeguards have been addressed and complied.

PPMO is responsible to implement the project in accordance with the approved plans and budgets and for the monitoring activities including yearly monitoring plan in cooperation with the District Coordination Office (DCO). PPMO is responsible to ensure the project's activities achieve the target and in doing so, in compliance with the environmental and social safeguards. The DCO is responsible for undertaking the field monitoring with the related agencies and in collaboration with villagers. The DCO provides the monitoring progress report to the PPMO as semi-annual and annual basis. PPMO prepares the semi-annual and annual progress reports on the project progress including the environmental aspects for the NPMO to compile the Project reports.

To assist the NPMO, the NESS conducts independent field monitoring twice a year on the progress of the environmental aspect to the project's activities, and in order to check compliance with environmental safeguards as per the EMP, and to provide annual environmental monitoring reports for ADB. In doing this, the consultant conducts training to the PPMO and DCO staff in environmental mitigation measures, monitoring, assessment and reporting.

The contractors and community teams (for afforestation activities) are responsible to implement their assigned activities under the PPMO and DCO and consultant supervision, in accordance to the approved ToR designs etc and ensuring the activities conform with the EMP and environmental safeguards.

III. ENVIRONMENT IMPACT ASSESSMENT AND MANAGEMENT PLAN

3.1 Environmental Impacts and Assessment

3.1.1 Infrastructure Sub-projects Rapid Assessment

Based on a review of the rapid environmental assessment and management plans (EMP) prepared for the infrastructure subprojects by the IC during the feasibility studies phase, it was concluded that only minimal environmental impacts could be expected from the small-scale infrastructure. The general environmental assessment for each main type of infrastructure is described below:

(i) Roads (access and internal village road):

Environmental impact during the Project design identified no significant environmental impact due to the use of laterite sources in borrow pits owned and approved by the district public works and transport office. Transportation from the borrow pit to the project site is minor create of the dust and noise due to the short distance of using the laterite source and short time activity during the construction phase.

The construction works involve spreading materials or temporary stockpiling of materials which may be a constraint to movement along the road. Dust and noise nuisance are also minor and temporary impacts, and those impacts could be mitigated through EMP. Safety concern during the road construction shall be limited and associated only during the drainage culvert construction and materials transportation. The most concern is the material quality which should be double checked to ensure with the road quality.

(ii) Village Water Supply:

The potential environmental impact from the location selection during the design would reflect to preventing the indirect impact to other land, material selection, timber, sand and gravel source locally, ground water treatment system design, water source and stream selection, water quality and sustainable water flow and preventing the forest area.

The short construction period is to have a minor land clearance, timber and module of formwork, groundwater drilling/dumping may occur in the limited project area, potential noise impact could be mitigated in the EMP, the stockpiling and spreading of road construction materials in the proper and designated location, the potential oil spillage may accidentally occur during the implementation and installing the water supply system. Water quality checking may require for secure the potential impact to the user in the long term.

(iii) Buildings (school, health center, market place, village meeting hall, teacher's house and patrolling house):

All the subproject buildings are located within the available space and approved by the district authority offices. Project design considers the environmental impact which relates to proper management of the material sources (such as the gravel, sand, brick and timbers); the grey water treatment and septic tank system designs.

The construction period will be minor and temporary impacts due to the short time activities on the land leveling, building platform preparing, formwork, temporary shelter and toilet, material transport, The environmental impacts are likely from dust and noise, construction waste and potential illegal timber product use, while most cases can be mitigated before and during construction stage. The potential damage and improper utilization of the building may occur during the operation.

(iv) Irrigation and irrigation maintenance:

The potential environmental impact related to the construction work is considered to be a minor impact. The dust, noise, transporting the material across to the site may cause the access road damage / compaction through the villager's land and paddy field by the heavy vehicle/equipment. During the construction may generate the domestic wastes and fuel spillage which it required to have the proper conducting the mitigation measure under the EMP. The potential land disturbing and soil erosion during the earth work, this shall be treated by having the initial consultation with the local authorities and villagers officially, and to ensure all local participants completely understanding on the Project's conception and potential environmental impact.

During the operation phase, the potential sediment and/or spoil trees occurs at the front of the irrigation dam would be regular cleaned with the local authority's support.

(v) Sanitation:

The sub-project design considers the impact from the materials manufacture and use and transportation and companies which operate under the provincial/district authority approval. The site locations were selected and approved by the community area and do not negatively impact the community or any water course nearby the sub-project area.

The potential impact from transporting the materials to the village will cause temporary disturbances to the local community and environment, and will create dust and noise nuisance during the construction.

Safety concerns during the earth excavation for soak tanks may be minor and those potential impacts could be mitigated through the EMP. The potential improper utilization of the sanitation would be occurred if there is lack of regular observation by the local authorities.

(vi) Ford (bridge):

The ford subproject is to work on the existing alignment and footprint of the present failed ford and approaches. The rehabilitation work of failed ford would not lead the negative environmental and social impact due to fact of restore work has a safe passage of vehicles

and local transportation along the 32km away from the district center heading toward to southern crossing of Houay Khinok.

The potential use of timber for formwork, temporary shelter and toilet, and the temporary water flow during the temporary diversion drainage will not reflect to having the significant environmental impact.

(vii) Paddy field and bund development:

The potential project selection and land improvement method is an important design stage, the potential environmental and social impact shall be considered and assessed during the design period. The Project area shall prevent the conflict of land use and management, clear compensation (if need), agreement make among the District supervisors and BCC coordinators and villagers. In case of the large area development may require to process the necessary environmental assessment or/and feasibility study.

During the land improvement, the technical support would be considered under the environmental friendly; preventing the indirect impact to the nearby water course due to the use of chemical, pesticide materials; and the potential erosion and sediment may occur.

The detailed design and drawings were finalized taking due consideration of the above and agreed with the respective agencies involved. Good understanding among their technical supervisors, the IC, as well as the provincial and district Project officers was considered necessary and undertaken.

Although only minor impacts were determined, close monitoring during construction and comprehensive final checking of the completed works, plus determination of appropriate operation and maintenance (O&M) requirements such as the need for waste management, wastewater discharge limit, pest and odour control, and preparation of O&M plans were identified as important management activities.

3.1.2 Other Activities

(i) Forestry Program (Planting and ANR):

The selection of the locations for forest planting (enrichment and bare land) and ANR is very important and is based on the target outputs. Although the objectives overall under BCCP are environmental and biodiversity improvement, there are always potential environmental concerns with its implementation. The areas selected must be agreed with all relevant authorities and the villages, and confirmed that the areas are in accordance with the relevant guidelines prepared by the Project.

The forestry activities are natural systems and follow the seasons from seed collection, establishment of nurseries and planting. Apart from very light applications of chemical fertilizers to promote growth in some species in the nurseries no other chemicals (fertilizers, insecticides, fungicides etc) are used in the forestry activities.

The potential issue during forestry is with land preparation for planting and land demarcation such as fires, soil disturbance, damage to existing trees and human activity during the follow-up forest maintenance activities and ANR patrolling. Disturbance of wildlife habitats also needs to be avoided during planting, patrolling and maintenance periods. Guidelines addressing these potential negative environmental aspects have been prepared, training for Gov't and villagers involved provided and the forestry work monitored to check compliance.

(ix) Patrolling Program:

The patrolling program follows the plan for law enforcement prepared in 2015 for BCCP villages, in which the steps required for implementation were outlined. Of importance is the requirement for the local communities to prepare forest management plans with agreed regulations from which the key areas for patrolling are identified in order to achieve concrete output and impacts.

Negative environmental impacts from the patrolling teams themselves are not envisaged under the patrolling programme provide the Project guidelines and village regulations are followed i.e. respect for the trees, wildlife, water and soils. To create awareness of these aspects, induction / pre-patrolling training was conducted with periodic refresher courses given as follow-up to which all patrolling team members and supporting officers were required to attend. Fire control during cooking, hunting wildlife for food, waste disposal, littering and chemical use during the patrolling (page 10 of patrolling plan 2015) were topics covered.

Reports from the patrolling teams on their observations are submitted regularly to the districts with onwards submission to the Provinces. The target is to report monthly but in reality reports every two to three months are more common. These reports include not only any unauthorized activity which may have negative environmental impacts (eg illegal logging) but also wildlife sightings and other general observations.

(x) Livelihood Program:

The livelihood program activities are selected by the villagers from many options able to be supported under the Project. Agreements are reached after ensuring a good understanding is achieved between the participating households and all relevant authorities. The activities offered include livestock raising, vegetable planting, home gardening, ginseng, rice development, fruit production and cardamom planting, amongst others. The village programs have been provided to the villager and individual households to implement in order to improve incomes, nutrition and overall living standards of the households.

Natural production methods are promoted and very limited use of chemicals or pesticides are encouraged. Vaccinations are essential and therefore used for livestock raising. Environmental concerns involve hygiene around the village area with the livestock such goats and pigs. The village environments are required to be monitored and monthly reports provided by the district supervisors and submitted to the coordinator to the provincial office. Information should be shared with the routine program monitoring by the district supervisor (health and hygiene office) and they should join together for providing training for village and community groups.

As for the infrastructure activities, although only minor impacts are determined for these activities, close monitoring during implementation is an essential management activity.

3.2 Environmental Management Plan

An environment management plan (EMP) was prepared for the infrastructure development and recommendations for the forestry, livelihood and patrolling activities. These latter activities were seen as having less negative impact and any foreseen issues were addressed in their respective implementation guidelines.

However, for Project consistency, based on the infrastructure development program EMP, the potential environmental issues for the forestry, livelihood and patrolling activities have been added. The revision of the environmental management plan (EMP) for BCCP has been finalized in Table 5: Potential Environmental Management Plan.

Table 5: Environmental Management Plan

Potential Environmental Problem Area	Potential Environmental Issues	Proposed Mitigation Measures
Location selection		
Residential agriculture and common property land	Temporary access road to the paddy field and irrigation	Provincial and District office had been conducted the land management and providing the land use permission and required agreement with the plan before implementation
Land management, selected forest	Insufficient land management, ambient shifting cultivation	Providing the re-planting and ANR program by having the villager's participation. To select the degraded forest area and to research out the possibility of land improvement.
Design		
Choice of materials and source	Use of the legal forest product and approved laterite source by Government	Wood and timber products only from PAFP approved suppliers. Explore and survey nearest laterite source to avoid the long transport, and to ensure with approved documentation exist.
Adequacy of drainage facilities	Disruption to local people and potential increasing of the sediment/erosion	Provision of adequately designed drainage and maintenance after completion of construction
Land and site stability, erosion, and inundation	Unstable land as a result of the subproject design. Unmanaged overland storm flows and erosion. Flooding of site and/or adjacent land as a consequence of the subproject design and implementation.	Provision of adequately designed drainage. Low-cost bio-engineering works to ensure land stability and control erosion and sediment. Design and provision of drainage channels and outlets to prevent/relieve potential flooding. Limited the unnecessary activity outside the project.
Natural habitat	Potential chemical use	The chemical and hazardous materials shall be prohibited to use in any activities of the programs.
Construction / Implementation and Operation Phase		
Construction of civil works, pavement and building structures	Noise and vibration nuisance.	Properly planning, limit working hours, not allow working at night time. Not allow working out of the Project's area.
	Dust nuisance and health risk	Wetting of surface during the dry season
	Spillage of oil and fuels from equipment or temporary workshop/storage	Cover in specification. Store in bunded and covered area. Check and repair oil, fuel and hydraulic fluid leakages for equipment. Prevent flow to water courses. Have adsorbent material (sand or sawdust) available to absorb spillage for safe removal. Limited the unnecessary activity outside the project.
	Improper waste management	Providing the construction waste management plan and role for water segregation, temporary waste collection platform, and disposal area for construction waste.

Quarry and borrow pit	Dust, nuisance and health risks as above. Using existing laterite sources of district.	Planning of operation to reduce the disturbing people. Avoidance of noisy operations during night time and nearby important wildlife. Cover in specifications. Explore and survey nearest laterite source and careful siting borrow pits. Cover and spray water on the stockpiles and exposed laterite construction to layer dust
Safety issue	Danger or risk to workers and local people	Contractor's safety plan, safety provision in contract, issuance of safety apparel.
Depots and temporary worker shelters and toilet	Nuisance to local people. Spread of infectious diseases from construction workers to local people.	Provisions for high standard of management in construction area and temporary toilet and storage sites. Dumping, stockpiling and spreading of road construction materials in safe location.
	Improper waste management	Provide the kick-off training on the workers and officers on the proper waste collection and segregation. To use of the approved disposal area and/or landfill. Apply the simple presenting and poster and facilities for collecting the wastes.
Cattle and patrolling shelter	Domestic waste	Provision training and induction to the new comers and villagers on the waste management (waste collection, prohibit of burning, hygiene sanitation and others)
Land improvement	Chemical and pesticide pollutant	Verification of implementation, including hazardous waste inventory; visual inspection of facilities, storage areas, and spill response kits; and reporting and response to hazardous spills and leaks.
Wildlife and natural habitat	Disturbing the natural habitat during the patrolling and reforestation and Potential chemical use	Implement a wildlife incident reporting system for contractors and villagers to report wildlife encounters and illegal activities involving poaching or harvesting of TFPs/NTFPs. The chemical and hazardous materials will be prohibited to use in any activities of the programs.
Bombing	UXO finding in the planting area	In case of finding UXO in the action area, the inspector immediately report to the district supervisor and related district authorities shall be informed to process the next step of UXO finding. Preventing the bomb area and detour the planting channel while waiting for the official informing of district authorities.
Livelihood program	Hygiene concern	Providing the awareness program and sharing the public information on the health protection. Providing the regular monitoring/observation on the livestock raising and composting by joining with concerned unit at the village level.
Human resource capacity for project monitoring	Insufficient reflecting progress report on environmental monitoring	Establish and instruct the assigned officers to regular monitoring on site. Providing the proper plan for monitoring and request the concrete monitoring report from DCO and PPMO. Providing the training for DCO/PPMO on the monitoring aspect and reporting as need. Providing the sufficient facilities for conducting the field monitoring.

3.3 Environmental Monitoring Plan and Reporting

The review approach involved a visit by the GIC National Environmental Safeguards Specialist (NESS) to the PPMOs (Champasak, Attapeu and Sekong province), to hold discussions with

BCCP Provincial Coordinators and environmental officers and then in each of the districts with the district construction supervisors and BCCP staff responsible for livelihoods, patrolling and afforestation activities. The provincial and district staff were requested to bring all data (including photos) they had on hand to the meetings and through discussion, the NESS would evaluate the situation with each activity site.

The environmental monitoring review updated the checks previously made in the earlier visits. As for the previous visits, only selected sites were able to be visited within the planned field schedule time-frame. The review gave the opportunity for the NESS to provide refresher training for PPMO and district staff on environmental monitoring at the field and reporting.

Following the discussions, 9 sites were selected for field monitoring and observation, representing the different types of infrastructure, forest conservation and livelihood program activities. Basically, most of the subprojects of each province are quite similar in design and activities and only slightly adjusted based on the actual location and community requirements.

Province	District	Village	Program
Champasak	Pathoumphone	1. Lao Gna 2. Nam Oom 3. Sanote	1. Water supply system 2. Water supply system 3. Forest conservation and health center improving
Attapeu	Phouvong	1. Viengxay 2. Namkong	1. Paddy field development, grass planting 2. Livelihood activities
	Sanamxay	1. Done 2. Kachae	1. Water supply system 2. Sanitation program
Xekong	Dakcheung	1. Dak Dom 2. Dak Mouan	1. livelihood program, patrol activity, planting and the access road 2. Livelihood activities

The EMP monitoring requirements required under the Project are given in Table 6. Compliance with these were checked during the discussions and site visits.

Table 6: Environment Impact Monitoring

Activities Potentially affecting to Environment	Potential Environmental Impacts	Proposed Mitigation Measures	Frequency	Responsibility for Implementation
Location selection				
Residential agriculture and common property land	Potential increasing the temporary access road	<ul style="list-style-type: none"> - Provincial and District office had been conducted the land management and providing the land use permission and - Required agreement with the plan before implementation 	Before construction/activity commence	Infrastructure consultant (IC), Provincial and District office
Land management, selected forest	<ul style="list-style-type: none"> - Disturb the protected forest - ambient shifting cultivation 	<ul style="list-style-type: none"> - Prevent the conserved forest - Providing the re-planting and ANR program by having the villager's participation. - To select the degraded forest area and to research out the possibility of land improvement. 	Before construction/activity commence	Consultant, Provincial and District office
Design				
Choice of materials and source	<ul style="list-style-type: none"> - Use of the legal forest product - Use of the approved materials 	<ul style="list-style-type: none"> - Wood and timber products only from PAFP approved suppliers. - Explore and survey nearest laterite source to avoid the long transport, and to ensure with approved documentation exist. 	Before construction/activity commence	Infrastructure Consultant (IC), Provincial and District office
Adequacy of drainage facilities	Disruption to local people and potential increasing of the sediment/erosion	<ul style="list-style-type: none"> - Provision of adequately designed drainage and clearance after completion of construction 	Before construction/activity commence	IC with district officers and village authority
Land and site stability, erosion, and inundation	Unstable land as a result of the subproject design. Unmanaged overland storm flows and erosion. Flooding of site and/or adjacent land as a consequence of the subproject design and implementation.	<ul style="list-style-type: none"> - Provision of adequately designed drainage. Low-cost bio-engineering works to ensure land stability and control erosion and sediment. - Design and provision of drainage channels and outlets to prevent/relieve potential flooding. - Limited the unnecessary activity outside the project. 	Before construction/activity commence	IC with district officers and village authority
Natural habitat	Potential chemical use. Improper treat at forest area.	<ul style="list-style-type: none"> - The chemical and hazardous materials shall be prohibited to use in any activities of the programs. - Provide the environmental orientation before patrolling the forest. 	Before construction/activity commence	GIC with district officers and village authority

Construction / Implementation Phase				
Construction of civil works, pavement and building structures	Noise and vibration nuisance.	<ul style="list-style-type: none"> - Properly planning, limit working hours, not allow working at night time. - Not allow working out of the Project's area. 	Once a month	Contractor, IC work inspector.
	Dust nuisance and health risk	Wetting of surface during the dry season	Twice a month	
	Spillage of oil and fuels from equipment or temporary workshop/storage	<ul style="list-style-type: none"> - Cover in specification. - Store in bunded and covered area. - Check and repair oil, fuel and hydraulic fluid leakages for equipment. - Prevent flow to water courses. - Have adsorbent material (sand or sawdust) available to absorb spillage for safe removal. - Limited the unnecessary activity outside the project. 	Twice a month	Contractor, IC work inspector
	Waste management	Providing the construction waste management plan, role for waste segregation, temporary waste collection platform, and disposal area for construction waste.	Once a month	Contractor, IC work inspector
Quarry and borrow pit	<p>Dust, nuisance and health risks as above.</p> <p>Using existing laterite sources of district.</p>	<ul style="list-style-type: none"> - Planning of operation to reduce the disturbing people. - Avoidance of noisy operations during night time and nearby important wildlife. - Cover in specifications. Explore and survey nearest laterite source and careful siting borrow pits. - Cover and spray water on the stockpiles and exposed laterite construction to layer dust 	Once a month	IC consultant with district officers
Safety issue	Danger or risk to workers and local people	Contractor's safety plan, safety provision in contract, issuance of safety apparel.	Twice a month	Contractor, IC work inspector.
Depots and temporary worker shelters and toilet	Nuisance to local people. Spread of infectious diseases from construction workers to local people.	<ul style="list-style-type: none"> - Provisions for high standard of management in construction area and temporary toilet and storage sites. - Dumping, stockpiling and spreading of road construction materials in safe location. 	Once a month	Contractor, IC work inspector

	Waste management, collection	<ul style="list-style-type: none"> - Provide the kick-off training on the workers and officers on the proper waste collection and segregation. - To use of the approved disposal area and/or landfill. - Apply the simple presenting and poster and facilities for collecting the wastes. 	Once a month	Contractor, IC work inspector
Cattle and patrolling shelter	Domestic waste	Provision training and induction to the new comers and villagers on the waste management (waste collection, prohibit of burning, hygiene sanitation and others)	Once a month	Contractor, Provincial and District officers
Land improvement	Chemical and pesticide pollutant	Verification of implementation, including hazardous waste inventory; visual inspection of facilities, storage areas, and spill response kits; and reporting and response to hazardous spills and leaks.	Twice a month	Contractor, Provincial and District officers
Wildlife and natural habitat	Disturbing the natural habitat during the patrolling and reforestation and Potential chemical use	<ul style="list-style-type: none"> - Implement a wildlife incident reporting system for contractors and villagers to report wildlife encounters and illegal activities involving poaching or harvesting of TFPs/NTFPs. - The chemical and hazardous materials will be prohibited to use in any activities of the programs. 	Once a month	Consultant, Provincial and District officers
Bombing	UXO finding in the planting area	<ul style="list-style-type: none"> - In case of finding UXO in the action area, the inspector immediately report to the district supervisor and related district authorities shall be informed to process the next step of UXO finding. - Preventing the bomb area and detour the planting channel while waiting for the official informing of district authorities. 	As request	Provincial and District officers
Human resource capacity for project monitoring	No project progress, no reflect progress report on environmental monitoring	<ul style="list-style-type: none"> - Establish and instruct the assigned officers to regular monitoring on site. - Providing the proper plan for monitoring and request the concrete monitoring report from DCO and PPMO. - Providing the training for DCO/PPMO on the monitoring aspect and reporting as need. - Providing the sufficient facilities for conducting the field monitoring. 	As request	NMPO, PPMO, DCO and Consultant
Operation phase				
Finalized technical check	Some part no conform with design	<ul style="list-style-type: none"> - Required to have the final check under the approved design 	As request	Contractor, local authorities

Livelihood activities	Less concern on the community hygiene	<ul style="list-style-type: none"> - Provide regular monitoring and joint with related unit - More cooperate with related local organization and require for specific monitoring and support (from Health and Education sector) - Provide the quarterly reporting on the current condition and progress at the village level up to district and provincial office. - Provide the basic hygiene awareness to each village on the livestock raising, sanitation and composting utilization. 	Once a month	Local authorities
Operation and Maintenance	Less completed documentation	<ul style="list-style-type: none"> - Provided the completed document and O&M manual. - Provide the training for O&M manual to the local authorities and teacher 	During the handover project	Contractor and Local authorities

IV. ENVIRONMENTAL MONITORING RESULTS

4.1 Summary of Compliance with EMP requirements

During construction of the infrastructure sub-projects, the environment monitoring was shared between the IC supervisors (until end March 2017) and the agency supervisors, thereafter. Handover of construction supervision from the IC to the responsible agencies took place on 7 April 2017. Training in environmental monitoring for the provincial and district officers was undertaken for the environmental officers by the IC in November 2016 and again in March 2017 by the environmental and social safeguards, and technical specialists. This latter training included not only infrastructure monitoring but also the requirements for the other BCCP activities. With the appointment of the NESS under GIC, instructions were provided during the missions in June 2017, Nov 2017, June 2018 and Dec 2018.

However, the regular environmental monitoring in the period January to July 2019 was again observed to have not been undertaken at the frequency and quality levels expected. It was expected that the results from the previous visit during which on-the-job-training to the PPMO and DCO supervisors for improving the environmental monitoring and reporting was provided, would be evident. However, it is still found that there is a lack of the clear inter-agency cooperation and reporting among PPMO, PoNRE, NPMO and district supervisors resulting in the inability of the PPMOs to present appropriate data.

The field observation and monitoring records from the field visits are given in Annex 1 and 2 including the reports and record of related environmental concerns from the three provinces.

Annex 3 contains a list of the persons met during the meetings and visits, and Annex 4 contains the Minutes of Meetings with the districts.

Table 7: Compliance with EMP Requirements (Environmental Performance)

Activities Potentially affecting to Environment	Environmental Impacts	Compliance Status (Yes, NO)	Comments/Reasons for Non-Compliance	Issues for Further Action
Location selection				
Residential agriculture and common property land	Potential increasing the temporary access road	Yes	None.	No
Land management, selected forest	<ul style="list-style-type: none"> - Disturb the protected forest - current shifting cultivation 	Partial (from Project activities) Yes (from farmer personal activities)	Slight disturbance from Project related activities However, there is serious encroachment in the conserved forest by the farmers own cultivation programs; without local consultation or agreement before the individual personal/investment had been made.	Actions to be taken against farmers involved in encroachment into conservation areas should include prosecution and restoration of encroached lands. Govt staff should also be held accountable for not reporting or stopping illegal deforestation activities Recommended that encroachment be stopped and areas replanted / ANR established.
Design				
Choice of materials and source	<ul style="list-style-type: none"> - Use of the legal forest product - Use of the approved materials 	Yes	- None	
Adequacy of drainage facilities	Disruption to local people and potential increasing of the sediment/erosion	Yes	- Insufficient drainage quantity	Require to ensure adequate facilities provided during construction
Land and site stability, erosion, and inundation	Unstable land as a result of the subproject design. Unmanaged overland storm flows and erosion. Flooding of site and/or adjacent land as a consequence of the subproject design and implementation.	Yes	- Require to observe on the bio-engineering works and slope protection during the construction	Require to closely check the erosion protection during the construction
Natural habitat	Potential chemical use. Improper treat at forest area.	Yes	- No use chemical in the program	Provide the environmental orientation before patrolling the forest.

Construction / Implementation Phase				
Construction of civil works, pavement and building structures	Noise and vibration nuisance.	Yes	- Done	None
	Erosion control, Land and site stability	Partial	- Potential erosion and instability along the embankment of the road and irrigation dam	- Providing the bank protection by using the topsoil and local plant cover along the slope - To ensure with soil quality during the construction in order to prevent the stability loss.
	Dust nuisance and health risk	Yes	- None	- None
	Spillage of oil and fuels from equipment or temporary workshop/storage	Yes	- None.	- None
	Waste management	Yes	- Require to monitoring during the operation phase the waste management and disposal.	- Require to monitoring during the operation phase the waste management and disposal.
	Site clearing	Partial	- Improper selection of the project location - Less concern on the environmental point of view.	- To have the kick-off consulting among engineer and environment team for finalize the location. - Require to have more rehabilitation the area for better environment.
Quarry and borrow pit	Potential transport issue	Yes	None	- Consider to provide the related documentation for transportation - Spray water on the stockpiles
Safety issue	Potential incidental to workers and local people	Yes	None	- Consider to provide the safety suit for the risky place
Depots and temporary worker shelters and toilet	Nuisance to local people. Spread of infectious diseases from construction workers to local people.	Yes	- Less concern on the waste management, - No temporary toilet and storage sites.	- Provide the waste management and hygiene concern
	Waste management, collection	Partial	- No kick-off training on the workers and officers on the proper waste collection and segregation.	- Apply the simple presenting and poster and facilities for collecting the wastes. - To use of the approved disposal area and/or landfill.
Patrolling shelter	Domestic waste	Partial	- Scattering waste at the forest	- Provision induction to the new comers and villagers on the waste management

Land improvement	Chemical and pesticide pollutant	Yes	None	<ul style="list-style-type: none"> - Continuous providing the awareness to local authorities not allow to use of the dangerous chemical for land improvement
Wildlife and natural habitat	Disturbing the natural habitat during the patrolling and reforestation and Potential chemical use	Partial	<ul style="list-style-type: none"> - Potential occur of hunting wildlife and poaching or harvesting of TFPs/NTFPs without permission. - The chemical and hazardous materials will be prohibited to use in any activities of the programs. 	<ul style="list-style-type: none"> - Provide the induction to the contractor and new comer on the prohibit of hunting wildlife and hazardous chemical within and nearby area of the project. - Implement a wildlife incident and illegal activity reporting system by the patrolling team including wildlife encounters and poaching or harvesting of TFPs/NTFPs.
			<ul style="list-style-type: none"> - The local investment to the cultivation program had been made without the proper cooperating among related sectors - The conserved area and forest have been invaded, the remain area may be reflected by cultivation activities. 	<ul style="list-style-type: none"> - The agriculture invests including the local cultivation should be initial approached to local authorities before begin the program particularly inside the conserved forest area. - The cultivation area inside the conserved forest area need to be rehabilitated. - The assigned committees would conduct the filed monitor and decide to rehabilitate those burned area by the supporting of those invader (investor/personnel)
UXO	No UXO finding in the planting area	Yes	<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Preventing the bomb area and detour the planting channel while waiting for the official informing of district authorities.
Human resource capacity for project monitoring	No regular monitoring document/report on the project progress and progress report on environmental monitoring	No	<ul style="list-style-type: none"> - Improper field monitoring record in village level. - No regular field monitoring and inspection at the local authority office for environmental concern, - Lack of the district and provincial monitoring report related to the environmental concern. 	<ul style="list-style-type: none"> - Establish and instruct the assigned officers to regular monitoring on site. - Providing the proper plan for monitoring and request the concrete monitoring report from DCO and PPMO. - Providing the training for DCO/PPMO on the monitoring aspect and reporting as need. - Providing the sufficient facilities (plan and budget) for conducting the field monitoring. - Pay more attention on the cooperating mechanism process among the central, provincial and district office.

Operation phase				
Completed construction	No agreement for closing the environmental impact (for none environmental concern in each village)	Partial	<ul style="list-style-type: none"> - Improper document for reference, and insufficient agreement and record. - Less concern on the handover document and consultation with related stakeholders. 	<ul style="list-style-type: none"> - Pay more attention for having the minute and agreed documentation before construction complete.
Rehabilitation	No official providing the Operation and Maintenance Manual Management and Budgeting.	Partial	<ul style="list-style-type: none"> - Less providing the official documentation for O&M to the local authority - Less concern from the contractor to rehabilitate the borrowing place. 	<ul style="list-style-type: none"> - Providing the appropriate O&M plan
Livelihood activities	Community hygiene	Partial	<ul style="list-style-type: none"> - Less participate on the hygiene education - Insufficient instruction to the village authorities and to the villagers. 	<ul style="list-style-type: none"> - Provide regular monitoring with on-going training in health - More cooperation with related local organization and require for specific monitoring and support (from Health and Education sector) - Provide the quarterly reporting on the current condition and progress at the village level up to district and provincial office. - Provide the basic hygiene awareness to each village on the livestock raising, sanitation and composting utilization.

Table 8: Issues for Further Action

Issue	Required Action	Responsibility and Timing	Current status
Old Issues from Previous Reports			
Selection of the project area, land and degrade forest	<ul style="list-style-type: none"> - New activities should be informed the local authorities, - Proper select the project area with related sector participation - Be provided the local permission before the cultivation commence particularly in the conserved area or conserved forest 	Local authorities and assigned provincial committee, DCO, PPMO	<ul style="list-style-type: none"> - Continuous cooperating with the local authorities for the activities. - Support for rehabilitation activity of degraded / damaged areas. - The encroached areas from cultivation to be resolved by the provincial committee
Adequacy of drainage facilities	<ul style="list-style-type: none"> - Regular inspect the facilities quality and quantity under the approved design. - Contractor would follow the approved design - Improper drainage would be maintained before handover to the local authority 	Contractor and district supervisors	<ul style="list-style-type: none"> - Local supervisor would inform to the PPMO for further action before final technical check. - The technical inspection will be double checked with the consultant carefully.
Land and site stability, erosion, and inundation	<ul style="list-style-type: none"> - Regular inspect on the slope protection along the road, irrigation embankment and project boundary. - Required to improve the slope protection by applying the bio-engineering and topsoil providing along the steep slope (potential area) - The potential erosion point would be well preparing the landscape before install the drainage pipeline/box culvert. 	Contractor and district supervisor	<ul style="list-style-type: none"> - Local supervisors had noted the issues and will consider to follow up under supporting by technical consultant - Local supervisor would inform to the PPMO for further action before final technical check.
Waste management	<ul style="list-style-type: none"> - Regular inspection and providing the monitoring record, - Provide the broad of waste segregation role particularly for the waste of sanitation building, - Providing the temporary waste collection platform 	Contractor / local authorities and district supervisors	Most of program had completed while the remain program will be monitored by the local supervisor.
Capacity building of the local supervisor on site	<ul style="list-style-type: none"> - Lack of budget plan for related unit on the environmental monitoring - The available local supervisors should be provided for regular monitoring - Lack concern on the environmental monitoring reporting and no regularly documentary report within the progress report. 	District supervisors including PPMO/DCO	<ul style="list-style-type: none"> - The training on the environmental monitoring and preparing the report had been conducted by NESS on December 2018 - The local authorities will pay more attention on the environmental monitoring

Insufficient environmental monitoring record/form on site	<ul style="list-style-type: none"> - Provide the sufficient facilities for conducting the field monitoring. - Well prepare the monitoring plan including sufficient budget. - Request to provide the regular monitoring record 	Local authorities and district supervisors, DCO, PPMO	PPMO, DCO and local supervisors will pay more attention for regular field monitoring, and to provide the environmental monitoring record quarterly.
Insufficient monitoring report	<ul style="list-style-type: none"> - Each monitoring mission, PPMO/DMPO should provide the environmental monitoring report - The local supervisors should provide the quarterly semi-annual and annual environmental monitoring report to the NPMO/PPMO 	District supervisors, PPMO and DCO	PPMO and DCO still be required to pay more attention to provide the environmental monitoring record, quarterly report, semi-annual and annual report to the NPMO and Consultant for further action.
Community hygiene	<ul style="list-style-type: none"> - Provide the awareness program on the hygiene concern from the livestock raising. - Regular joint monitoring with the related local authorities of health and education. 	Local authorities and district supervisor	Local supervisor will report the progress to PPMO before next environmental monitoring.
Infrastructural construction	<ul style="list-style-type: none"> - Local supervisor, DCO, PPMO and NPMO would double check the quality of the road construction, and to recheck the building facility (particularly the sanitation program) before fully handover. 	DCO, PPMO, NPMO	DCO will report to PPMO for consider to double check the completed program before technical final check.
Operation and Maintenance Manual	<ul style="list-style-type: none"> - Continuous to provide the O&M document and plan for the completed project - DCO and PPMO would guide the local authorities on the O&M 	DCO, PPMO, NPMO	Some district had been provided O&M, while the actual operate would be guided by PPMO/DCO to village authorities
New issues during this report period			
Water supply system	<ul style="list-style-type: none"> - Regular cleaning the solar panels and clear weed growth in the site area - To set up the role for using the water tap in the village - To recheck the technical system of the pumping 	DCO, PPMO, NPMO	Some villages could not use of the water caused by the pumping system did not work well. Remedial actions to be taken before final payments to contractors. Final checks by NPMO/PPMO/DCO
Pending issue on improper technical check	<ul style="list-style-type: none"> - To maintain the improper installing the toilet, water supply system and road drainage pipeline. 	DCO, PPMO, NPMO	<ul style="list-style-type: none"> - This will be monitored for next mission. - The improper installing and construction would be clarified and maintained before handover the subproject.
Conserved forest	<ul style="list-style-type: none"> - The invaded cultivation into the conserved area for forestry - The potential disturbing by the cultivation activities and extension 	DCO, PPMO, NPMO	<ul style="list-style-type: none"> - The assigned provincial committee will conduct the mitigation measure in order to reduce/solving the invading issue inside the conserved area of forest.

			<ul style="list-style-type: none"> - This will be monitored for next mission.
Remain 10% of subprogram	<ul style="list-style-type: none"> - The potential use of remain 10% budget is not clear to the local authorities and district supervisors - The official clarification need to announced by the PPMO/NPMO 	DCO, PPMO, NPMO	<ul style="list-style-type: none"> - As per ADB Aide Memoire, June 2019, the 10% budget retained from non-compliant infrastructure sub-projects is to be used for remedial works. - NPMO / PPMOs to inform local authorities and communities

4.2 Summary Activities Concerned to Environmental Impacts

In general, the local activity supervisors had focused on monitoring progress of the infrastructure, planting, ANR, livelihoods and patrolling activities but with little attention paid to monitoring the environmental (and social) aspects.

The pending issues for infrastructure persist after several years with lack of actions being taken by the PPMOs to correct the improper installation and construction in a few sub-projects i.e. toilets (Ban Kachae in Sanamxay), water supply systems (2 in Pathoumphone and 2 in Dak Cheung) and 8 road improvement projects (7 in Pathoumphone and 1 in Dak Cheung), 1 irrigation project (Ban Thongpha in Pathoumphone) and which at the time of the visit were (all but 1 road in Dak Cheung) still in need of remedial works. The repair of the 4 water supplies is now being undertaken by a new contractor whilst the toilets, irrigation system and 1 road in Pathoumphone are being repaired under force account and NPMO supervision. The balance 6 roads in Pathoumphone are being left as they are with existing defects, as the contractor(s) have walked away and they cannot be repaired before the completion of BCCP-GMS in Sept 2019. There are no significant environmental risks associated with the completion of the remedial works.

No significant environmental issues were identified with the livelihoods or patrolling activities. However, there were concerns raised for the ANR activities in Pathoumphone.

The cultivation of cassava by communities this season is widespread due to the high economic returns but unfortunately illegal encroachment into the production and conservation forest areas in 6 villages in Pathoumphone has occurred. A provincial committee has been appointed to investigate these infringements of the PLUPS and legal proceedings are being taken against the perpetrators. Approximately 100 ha of ANR area has been destroyed and restoration of the land is now necessary. It is recommended that the Project should support the communities to immediately establish nurseries so that quality seedlings (mixed NTFP and other timber species) can be replanted next season otherwise this land will remain permanently degraded or lost to agriculture. This restorative work will be monitored on the next mission.

The summary of the impacts from the BCCP infrastructure, forest conservation, and livelihood activities impacts this report period is given in Table 9.

Table 9: Summary of Environment and Social Impact observations for Infrastructure, Afforestation, Livelihoods and Patrolling activities

Activities	Anticipated Impacts	Degree of Impact			Mitigation Measures Requirement
		None	Low	Medium	
Road drainage (access and internal village road)	Sediment load and erosion along the culvert side and drainage line.	-	-	X	Final technical checks should be undertaken and instruction provided to the village O&M committees on the need to maintain drains and culverts i.e. clear weeds, remove sediment and repair scour
Conserved forest	Encroachment of the conservation areas and forest	-	-	x	The assigned provincial committee to conduct the mitigation measure as soon as possible – survey and legal proceedings The Project to support production of quality seedlings for the replanting of the encroached areas by the perpetrators
Village water supply	The improper installing of pumping system, the unregular cleaning the solar plate and ground area. The unclear role of using the water tap.	-	x	-	To have the final technical check on the pumping system and electric lines. Further training and regular actions by O&M team in village. Provide the simple instruction/ make agreements for the water taps / water use by the local authority with villagers
Waste collection	Sanitation waste, and plastic waste from planting activity	-	x	-	Provide simple diagram of the waste segregation, recycling and waste collection before sending to the waste pit
Capacity of the local Supervisors	Improper environmental and technical inspection, less concern on the report preparing, and insufficient field record.	-	-	x	PPMO to provide a proper work-plan and budget for environmental inspections. Improve the interagency cooperation Preparing the progress report and environmental monitoring report quarterly.
Completion program	Some programs had less concern on quality during the final check, and the pending issue is still remained	-	-	x	Ensure works and documents are complete The pending issues should be closed and solved before handover to the local authority.
Livelihood activities	Community hygiene	-	x	-	More cooperation with Health and Education sector for more specific support. Provide basic hygiene awareness to each village on the livestock raising, sanitation and composting utilization
Balance 10% payments for incomplete infrastructure contracts	Community concern	-	-	x	The PPMO and DCO to clarify with the 6 villages with incomplete roads Pathoumphone why the balance funds were not paid to the Contractor for their roads and where the funds have been utilized in the infrastructure sub-components..

V. CONCLUSION AND RECOMMENDATIONS

During this mission period, there were no major environmental and related social issues observed with the Project supported activities, but some potential adverse impacts are expected with the infrastructure sub-projects during their operation if there are no regular inspections and on-going maintenance of those facilities.

It was found that less attention is being paid to environmental aspects during the technical inspections because the BCC-GMS component is to end in September 2019, however, indirect impacts from the program activities has been occurring which do require regular monitoring and some of mitigation actions to be taken by the DCO and PPMO.

The incomplete installation of the infrastructure system is being rectified and all but 6 road contracts are to be fully completed. The use of 10% contract payments retained from the 6 incomplete road projects in Pathoumphone for the remedial works in some of the other infrastructure, needs to be explained by the PPMO and DCO to the concerned villages.

For the encroached forest areas in Pathoumphone in the 6 BCCP villages, steps must be taken to by the Project to support the assigned provincial committee to work with the communities to restore the land back to conservation forest.

For the livelihood activities, there should be joint monitoring with the health and education sector for supporting hygiene awareness raising in the communities.

The capacity building training on environmental monitoring for local supervisors which was conducted by NESS in December 2018 was followed up this mission. Although the training had been acknowledged by the local supervisors, the outcome of the environmental document agreed was not undertaken because of inadequate budget planning and low attention given to the environmental impacts. This was reported due to the impending closure of the BCCP-GMS component of the project.

The recommendations for improving the environmental monitoring are:

- Allocating adequate budget for regular environmental and social monitoring and reporting, and to ensure the provincial and district coordinators commit to implementing the activities on time,
- Assigning supervisors who will continuously monitor the project progress and related issues and concerns.
- Provinces to prepare quarterly monitoring plans to be implemented by provincial and district supervisors and to be followed up by the provincial coordinators.
- Providing adequate budget and resources (camera, report template, record forms and transportation) for regular monitoring by the districts and village authorities in accordance with the plans.