



Impact Assessment Report: "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project – (Additional Financing)"

Project Number:43120-026

PROJECT NUMBER: REG 43120 (G0296/L2874) and 43120-026 (G0546-LAO)



Prepared by Drs. Kees R. Jonkheer¹

31 March 2022

Submitted to:

Project Management Unit (PMU) SPS-GMS Trade Project Ministry of Agriculture and Forestry, Department of Livestock and Fisheries, Lao PDR mail: <u>kinnaly.sps@gmail.com</u>, <u>pmpa.sps@gmail.com</u> Via Electronic Submissions

Submitted by:

Drs. Kees R. Jonkheer M. Vaumontlaan 38, 2101 EE Heemstede, The Netherlands E-mail: k.r.jonkheer@jonkheerconsulting.nl

¹ Jonkheer Consulting is a consulting firm specializing in impact assessments and private sector development. Its website can be found at <u>www.jonkheerconsulting.nl</u>.

Contents

Acr	onym	15	4
Exe	ecutive	e Summary	5
1.	Intro	oduction	. 14
	1.1.	Context	.14
	1.2.	Objectives of the Impact Analysis	. 15
	1.3.	Impact Assessment and Outcome and Output of the Project	.16
	1.4.	Technical Approach and Methodology	. 18
2.	The	State of SPS Management in Lao PDR at the start of the Project	. 22
	2.1.	Increased formal trade in AFF products to GMS	.23
	2.2.	Export and Import AFF Products between Lao PDR and GMS, per Sector, per Country	y 25
3.	Tecl	hnical Impact Assessment of the Project	.26
	3.1.	Project Arrangements	.26
	3.2.	Project Relevance	.26
	3.3.	Project Design	.27
	3.4.	Project Implementation	. 29
	3.5.	Project Outputs & Sustained Effects and Impact	.31
	3.6.	Cost-Effectiveness of the Project	. 32
	3.7.	Project Features for Improvement	. 33
	3.8.	Project Management	. 35
4.	Imp	act Assessment of the Project, per Sector	.37
	4.1.	Beneficiaries	.37
	4.2.	Output 1: Strengthened Surveillance and Inspection Programs	.38
	4.2.1	. Plant Health	.38
	4.2.2. Animal Health		
	4.2.3	- Food Safety	.46
	4.3.	Output 2: Improved Regional Cooperation and Harmonization	.47
	4.3.1	. Plant Health	.47
	4.3.2	Animal Health	.48
	4.3.3	B. Food Safety	.49
	4.4.	Output 3: Enhanced Education Levels/University Training of SPS Specialists	.51
	4.4.1	. Plant Health, Animal Health and Food Safety	.51

5.	Conclusions and Recommendations	. 53
Refe	erences	. 55
Арр	endix I: Export of AFF products from Lao PDR to GMS countries	.56
Арр	endix II: Import of AFF products to Lao PDR from GMS countries	.57
Арр	endix III: Annual Development of Export and Import of AFF products from/to Lao PDR	. 58
Арр	endix IV: Survey Questionnaire	. 59
Арр	endix V: Interview Questionnaire Plant Health	. 67
Арр	endix VI: Interview Questionnaire Animal Health	.70
Арр	endix VII: Interview Questionnaire Food Safety	.72
Арр	endix VIII: Interview Questionnaire Education	.75
Арр	endix IX: Interview Questionnaire Project Management	.78
Арр	endix X: Survey Population	. 79
Арр	endix XI: Sample Population	.80

Acronyms

ADB	Asian Development Bank
AFF	Agriculture, Food, and Forestry
APPC	Asian Pacific Poultry Conference
ARASFF	ASEAN Rapid Alert System for Food and Feed
ASEAN	Association of Southeast Asian Nations
CIU	Component Implementation Units
CODEX	Codex-Alimentarius of the FAO-WHO
CSF	Classical Swine Fever
DAFEO	District Agriculture and Forestry Extension Office
DOA	Department of Agriculture of the Ministry of Agriculture and Forestry
DOLF	Department of Livestock and Fisheries of the Ministry of Agriculture and Forestry
DWRS	Detection and Warning System
FA	Faculty of Agriculture
FAO	Food and Agriculture Organization of the United Nations
FBO	Food Business Operators
FDD	Food & Drug Department of the Ministry of Health
FDQCC	Food and Drug Quality Control Center
FMD	Foot-and-Mouth Disease
GHP	Good Hygiene Practices
GMP	Good Manufacturing Practices
GMS	Greater Mekong Subregion
INFOSAN	International Food Safety Authorities Network
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ISPM	International Standards for Phytosanitary Measures
Lao PDR	Lao People's Democratic Republic
MAF	Ministry of Agriculture and Forestry
MOH	Ministry of Health
MoU	Memorandum of Understanding
NAHC	National Animal Health Center
NCLE	National Centre of Laboratory and Epidemiology
NGO	Non-Governmental Organization
NUOL	National University of Laos
OiE	Office International des Epizooties – World Health Organization for Animal Health
PAFO	Provincial Agriculture and Forestry Office
PAM	Project Administrative Manual
PC	Phytosanitary Certificate
PEQ	Post-Entry Quarantine
PMU	Project Management Unit
PPC	Plant Protection Center
PRC	People's Republic of China
PTAC	Project Technical Advisory Committee
SEACFMD	South-East Asia and China Foot-and-Mouth Disease Program
SOP	Standard operation procedures
SPS	Sanitary and Phytosanitary (Handling)
TAD	Transboundary Animal Diseases
ToRs	Terms of References
VEU	Veterinary Epidemiology Unit
WHO	World Health Organization

Executive Summary

The Impact Assessment of the Project has been conducted on the basis of, Survey, Sectorial Interview Questionnaire and Review of documents. Impact has been measured on three main Outputs²: Surveillance and inspection for plant health, animal health, and food safety, Regional cooperation and harmonization for SPS measures and practices, and enhanced education levels and university training of SPS specialists.

Technical Impact Assessment of the Project

Realism and sense of priority for SPS Handling management seems present in Lao PDR. Assessment of project implementation shows considerable differences, by province, by sector. Plant Health, Animal Health, Food Safety and Education sector were satisfied with the project. However, these sectors need more support to upscale the SPS work for keeping in view the current circumstance to further increase the trade. The highest impact the project achieved on strengthened surveillance and inspection programs, the least on improved regional cooperation and harmonization. This is an important find, since the Plant and Livestock sector is overwhelmingly the most important sector in exports of AFF products from Lao PDR to the GMS region, and remains the main sector in imports of AFF products.

Overall, the project has been assessed relevant to SPS Handling, fitting in a national program, for achieving sustained outputs, and cost-effectiveness and committed national resources. The project design was most clear and relevant on beneficiaries, outputs, linkages, and risk identification, least on available funds and project management. Project management did well on maintaining and operating the PMU, the need for improvement of English proficiency of staff was emphasized and requires improvement.

Project duration should be extended (score: less than satisfactory), while the Project size assessed merely adequate. The cost-effectiveness of the Project scored lowest of the project arrangements. Most improvement is needed on participation, performance and sustainability, while there is room for improvement on effective project selection, within the Project.

Project Impact Assessment per Sector

Impact Project on Outputs:

1. Strengthened Surveillance and Inspection Program:

- Annual surveys of pest and disease information for priority crops
- Surveillance of transboundary animal diseases
- Annual food safety survey and inspection
- 2. Improved Regional Cooperation and Harmonization:
 - Active participation in regional and international gremia
 - Bilateral working groups
- 3. Enhanced Education Levels and university training of SPS specialists:
 - Teaching and laboratory facilities

² See ToRs and Project Sheet ADB.

- Plant pest and disease, animal pest and disease, food safety curricula upgraded, with associated teaching materials
- Post-graduate trainees completed courses (annual internships)

Output 1. Surveillance and inspection for plant health, animal health, and food safety

Plant Health

Increased capacity of the PPC. Plant Protection Center has the equipment and tools for field surveys, for the laboratory at the center, the full range of potential vehicles, that enables to fully support the work. Pest monitoring team has the ability to take action and solve problems in a timely manner. Additional pest lists have been developed for 30 crops comprising of Sweet potato, jackfruit, longan, durian, passion fruit, mandarin, pomelo, dragon fruit, and 10 types of vegetables (pepper chilly, soybean, mung bean, peanuts, Chinese bean, white radish, cabbage, pumpkin, eggplant, tomato), Tea, jobs tear, rubber, melon, coconut, pineapple, papaya, rambutan, guava, sugarcane, lime, sweetcorn and cardamom, in particular the pest lists of sweet potato, and beans and the lists of rice, corn, watermelon, cassava, banana has been updated. This has resulted in further successful market access agreements with bilateral trading partners, through improved trust and readiness with all the essential documents for the trading partners.

Upgrading of fertilizer and pesticide analysis. The Plant Protection Center has improved its laboratory infrastructure, by: 1. provision of a complete set of research tools and equipment has made it capable of analyzing the quality of fertilizers and pesticides, including residues in plant products, 2. Plant protection center staff obtained the ability to analyze themselves and can pass on training to the Provincial Agriculture and Forestry Offices (PAFOs), 3. Knowledge acquired to identify and inform the society about chemical fertilizers or essential inputs of the production that do not meet the quality standards.

The upgrading of fertilizer and pesticide analysis has made producers aware of how to utilize fertilizer in a technical manner. A package of vegetable products that detects residues has been drawn up, and vegetables which have residues of harmful substances are consequently disposed. A list of plants and fruits indicating which are safe and which are not has been drafted, allowing consumers to have information on choosing safe products.

Impact on Trade. Under the forest health and SPS compliance of trade in forest products, a national situational analysis of the forest pest situation and phytosanitary requirements has been made. The project has introduced a risk-based import management system that includes: (i) risk categorization; (ii) development of standard operating procedures, and staff training; (iii) acquisition/development of visual guides that assist border inspectors in the identification of suspected pests and diseases; (iv) production of SPS/ISPM (International Standards for Phytosanitary Measures) awareness materials (v) improved data management; and (vi) monitoring of pesticide residues at border points. Based on this system, all import to Lao PDR of agricultural products should have a phytosanitary certificate (PC) and submit to post-entry quarantine (PEQ), including seeds and planting materials.

Supply chains of priority crop products (initially corn, followed by rice) for growing regional markets (especially China) have been strengthened by enhancing both public capacity to support better onfarm and post-harvest management practices. The project has achieved that producers and exporters are well informed on SPS awareness and have a good understanding on Memoranda of Understanding (MoUs) with trading partners. During the project implementation, the export volume has increased significantly especially to China, Vietnam and Thailand, with since 2013 respectively 72% average annual growth of exports to China, and both 20% average annual growth of exports to Vietnam and Thailand.

Animal Health

Improved Surveillance. Two surveillance of transboundary animal disease were established in Xiengkouang and Savannakhet province. Four risk-based surveillance and awareness of transboundary animal diseases been established in Xiengkouang, Savannakhet, Borlikhamxay and Khammouan provinces.

Increased Capacity of the National Animal Health Center (NAHC). Improvement has been made to enhance the survey, test and respond for the two priority diseases FMD, and CSF.

Baseline Survey. The project experts conducted a basic preliminary quantitative survey on the quality and use of veterinary drugs, focusing on interviews with stakeholders involved in the use of veterinary drugs, such as farmers, pharmacies, village veterinarians, provincial/district veterinarians.

Improved testing and monitoring of animal product safety. Improvements have been achieved on testing and monitoring, training, surveillance, data collection and regional cooperation between GMS and ASEAN.

Improved border situation of animal health handling. The project has resulted in an improved border situation vis-à-vis animal health. This includes strengthening technical capacity within the National Centre of Laboratory and Epidemiology (NCLE) to conduct risk assessment activities while establishing a set of procedures for border activities and the specification of a set of import conditions for high risk products.

Strengthening Capacity. The management capacity has been strengthened by: acquiring more specialized personnel in the analysis of animal diseases, provision of tools and equipment for inspection and research, a central epidemiological unit has been established, veterinary checkpoints have been established in the 6 target provinces of the project, and meat inspectors were trained in each of the four target districts of the four provinces. Capacity has further been strengthened in risk based managed import and export of live animals and animal product, as well as the formulation of a strategy for inspecting illegal cross border animal movement.

Upgrading laboratory equipment. The project has provided tools, materials and laboratory consumables necessary for the examination of cross-border animal diseases and residues to the Central center for Disease and Animal Feed Research. Training was conducted for technical staff to inspect basic animal products, veterinary residues and animal feed, improved manuals, guidelines and implementation standards on cross-border animal disease screening were provided, technical staff to diagnose cross border animal diseases was trained.

Quality Management. Quality management has been initiated on 1. cross-border animal disease control activities, 2. research activities on animal diseases, veterinary drugs and residues in primary animal products and animal feed, 3. border veterinary checkpoint activities, and 4. primary animal product safety.

Food Safety

Food safety surveillance program. The Food and Drugs Department of the Ministry of Health (FDD) has established inspection capacity in 6 provinces of Lao PDR introduced by 2020 with annual reporting showing a reduction in subsequent reported food outbreaks in those provinces and upgrade the national food laboratory. The Food and Drug Department has developed a food safety surveillance program by collecting data from the provincial surveillance, organizing training sessions for inspector officers on food safety surveillance, food inspection on a risk basis.

Expansion of the implementation of annual programs of food safety surveillance, monitoring, inspection, and hazard response. For food safety, project has supported the expansion and implementation of annual programs of food safety surveillance, monitoring, inspection, and hazard response. Capacities were strengthened through scholarships and training of inspectors, with a focus on both imported and domestic products. Support is provided for food testing and for selective upgrading of testing facilities. Cooperation and exchange of information with neighboring countries is supported through bilateral working groups, and through participation in: (i) World Health Organization's International Food Safety Authorities Network (INFOSAN); and (ii) the ASEAN Rapid Alert System for Food and Feed (ARASFF). Support has been given to produce material for awareness-raising and food safety education, and for improving capacity for rapid intervention in case of outbreaks.

The Food and Drug Department, Ministry of Health and Food and Drug Administration, has implemented an annual food inspection program with food and beverage samples collected every quarter.

Improved food safety handling. Improved food safety handling in the tourist industry and related parts of the food industry is pursued through promoting Good Hygiene Practices (GHP) and Good Manufacturing Practices (GMP) on the basis of enterprise grading and certification FBOs based on compliance of GMP and HACCP. Project supported study visits were conducted, information and experiences on the development and application of scorecard-based systems were collected from China, Singapore and Thailand - where audit systems are used for diagnosing food safety handling procedures. The project has supported the drafting of suitable regulations for implementation of the grading system and regarding definition of qualification of providers. The Food and Drug Department has developed a 15-point guide on good food preparation for hotels and restaurants to ensure food hygiene and safety, as well as conduct training for food processors. A tourism establishment grading system has been developed.

Possibilities for Lao PDR to use assessments by other GMS countries. For first-time market access requests for processed food products, cooperation has been established with Thailand in exporting Food from Lao PDR, by inspecting the production facilities by the authorities of Thailand before the first export.

Application of Risk-based methods. A list of risk control food products has been established, with specific inspection rules in each group according to the risk level. For example, high-risk foods must be registered before importation and 100% inspected at checkpoints. Food Safety Inspection at the checkpoints are carried out by the authorities who inspect food and medicine.

Output 2. Improved Regional Cooperation and Harmonization

Plant Health

Bilateral working groups. Bilateral working groups have been established on plant health, animal health and food safety with memorandum of agreement signed for trade in key crops of

Lao PDR. A total of 40 market access agreements/MOUs signed (12 were completed under L2874/G0296 and 28 were signed under G0546. Pest reports are regularly exchanged through the website of IPPC and APPC.

Institutional twinning arrangements. Under institutional Twinning, there has been close cooperation with Khon Kaen University in Thailand. Activities have been conducted for vocational training to involve university staff and students in applied research, surveillance, testing and diagnostics. The collaboration was extended to Kasetsart University for plant protection and Chiang Mai University for food safety science. Guest lecturers, including some from MAF, were brought in to teach on special topics related to plant protection, veterinary medicine and food safety. All CIUs are continuously coordinating with the NUOL. Guest lecturers are being mobilized to build the capacity for selected topics. CIUs are coordinating with OiE, IPPC, Food and Drug Department of adjoining countries, universities located in the regions for the institutional twinning.³

Participation in regional fora. In addition to the participation in regional fora already covered under the other outputs (e.g., SEACFMD, INFOSAN, ARASFF) and specific arrangements, regional cooperation and harmonization in SPS has been further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety. DOA regularly attend Asia meeting on SPS.

Animal Health

Participation in Regional SPS Initiatives. Information on animal health has been exchanged with the ASEAN Network. The Department of Livestock and Fisheries has been actively involved in the SEACFMD project by sharing information on foot-and-mouth disease through the International Organization for Animal Health (OiE) websites and Facebook page (<u>https://www.facebook.com/Seacfmd-Campaign</u>).

In addition, information is exchanged with neighboring countries on a monthly and quarterly basis. The Department of Livestock and Fisheries also regularly participated in the annual meeting of the Southeast Asia Regional Foot-and-Mouth Disease Control Program (SEACFMD). For international Food Safety Network, the Department of Livestock and Fisheries has provided information on the safety of primary animal products to the Ministry of Health, which is the main focal point with the organization.

The Department of Livestock and Fisheries regularly reports on cross-border animal diseases on a monthly basis to the international OiE. The Department of Livestock and Fisheries regularly reports information on animal feed to the ASEAN Warning Agency.

Bilateral working groups. During the implementation of the project, meetings were held with neighboring countries (Thailand, Vietnam and China) with the relevant technical departments participating, with each meeting providing a memorandum of understanding between the two

³ Design and Monitoring Framework, Updated as of 31 December 2020, of the Project: "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project - Additional Financing.

countries as a basis for practical implementation. With China, the signing of a joint agreement was completed to export cattle to China for the first time in Muangsing, Luangnamtha Province.

Institutional Twinning Programs. Under institutional Twinning, there has been close co-operation with Khon Kaen University, especially with veterinary science ever since inception of the Project. Co-operation was established on the improvement of the epidemiological work, technical staff at the Department and provincial level was sent for training. The collaboration was extended to Kasetsart University where guest lecturers, including some from MAF, were brought in to teach on special topics related to plant protection, veterinary medicine and food safety.

Information Sharing. Information on the safety of primary animal products is shared with the Ministry of Health, the main coordination body with the ASEAN Food Safety Network. Partnership has been established with Ministry of Health to draft the ASEAN Food Security Strategy.

Participation in Regional Fora. Regional cooperation and harmonization in SPS has further been deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam. Participated in and hosted bilateral meetings with the People's Republic of China, Thailand and Vietnam on facilitating cross-border trade in animals and livestock products. The Department of Livestock and Fisheries has actively participated in the SEACFMD, sharing information on the state of the foot-and-mouth disease on a monthly and quarterly basis.

Food Safety

Participation in regional initiatives. The Food and Drug Administration has been the National Coordinator of the International Food Code (CODEX), the international Food Safety Authority (INFOSAN), and the ASEAN Rapid Alert System for Food and Feed (ARASFF), which hosted the 7th Conference in Lao PDR. Information from both systems (CODEX, and ARASFF) is shared with domestic parties, especially in the case of notifications of goods exported from Lao PDR. Lao PDR was not able to implement a notification system due to the lack of equipment and budget to analyze the food product at the check point.

Bilateral working groups. A Memorandum of Understanding has been signed between Laos and Thailand on cooperation and exchange of lessons learned and capacity building on food safety. A draft memorandum of understanding with China and Vietnam is being drafted, not only focusing on only trade in products. No institutional twinning arrangements were made.

Information sharing. FDD share Food SPS data with ASEAN weekly by email, Line and WeChat. FDD also update information on INFOSAN and ARAFFS frequently depending on the food safety SPS cases. Detailed information with Thailand, China and Vietnam shared every year during bilateral meetings. INFOSAN team was established with focal point in MOH, which was subsequently expanded to include the agriculture sector. The ARASAFF team is led by MOH was also expanded to include the agriculture sector. Report of food to ASEAN based on case by case. FDD received the quality report of food from ASEAN countries. **Institutional Twinning Programs.** Under institutional Twinning, there has been close co-operation with Khon Kaen University in Thailand. Activities have been conducted for vocational training to involve university staff and students in applied research, surveillance, testing and diagnostics. The collaboration was extended to Kasetsart University for plant protection and Chiang Mai University for food safety science. Guest lecturers, including some

from MAF, were brought in to teach on special topics related to plant protection, veterinary medicine and food safety. CIUs are coordinating with OiE, IPPC, Food and Drug Department of adjoining countries, universities located in the regions for the institutional twinning.

Information sharing on food safety surveillance activities with the International Food Safety Authorities Network and ASEAN Rapid Alert System for Food has been undertaken annually.

Participation in regional fora. The Food and Drug Administration of Public Health has cooperated with China, Thailand and Vietnam by meeting every two years to exchange and update on the management of food safety. On the 28-29 July 2021, the 5th meeting was held between Thailand and Laos (online).

Output 3. Enhanced Education Levels and university training of SPS specialists

General

Improvement of Education. The Faculty of Agriculture of the National University of Laos is leading the implementation of the improvement of Education. Activities include (i) curricula development, (ii) departmental laboratory and teaching equipment upgrade, and (iii) regional scholarship program. Implementation of these activities are progressing.

Degree Program completed. Thirty-four students (14 female) of academic session 2015-16 and 30 students (14 female) of academic session 2016-17 of Plant Protection have completed their degree program. Similarly, 29 students (18 female) of academic session 2015-16 and 33 students (14 female) of academic session 2016-17 of Rural Economy and Food Science have completed their degree program.

New Students. During the academic session 2020-21, a total of 120 new students (74 female) have been enrolled: (i) bachelor's degree in plant protection 40 students (19 female), (ii) bachelor's degree in veterinary Doctors of Veterinary Medicines 40 students (29 female), and (iii) bachelor of sciences in Rural Economy and Food Science 40 students (26 female).

Education of CIUs. Education of CIUs, located at the Faculty of Agriculture of the National University of Laos. Each CIU consists of app. 60 government staff, located at the Ministry as well as in the provinces. The implementation arrangements of CIUs are described in detail in the Project Administrative Manual (PAM).

Plant Health, Animal Health & Food Safety

Upgrade SPS academic education. Project has upgraded SPS academic education by improving the quality of teaching at Faculty of Agriculture-National University of Laos (NUOL). This covered: (i) updating of curricula, (ii) improved teaching methodology; (iii) training opportunities including student internships with Ministry of Agriculture and Forestry (MAF) and Ministry of Health (MOH) for on-the-job training, and (iv) improved laboratory and teaching facilities. Support has been given to produce material for awareness-raising and education, and for improving capacity for rapid intervention in case of outbreaks.

Upgrade Curricula. Upgrade of the plant pest and disease, animal pest and disease, food safety curricula, with associated teaching materials produced by 2016 and collaboration between NUOL, MAF and MOH strengthened in surveillance, testing and diagnostics, teaching in Lao PDR, by 2020.

Improvement quality of teaching staff. Improving the quality of teaching staff has focused on: (i) filling gaps in specialization presently available to the faculty; (ii) improving the command of English language (to better access competitive scholarships); and (iii) providing some advanced training (within Asia, but using English language curricula) in specialist short courses and at MSc and PhD levels.

Upgrading of teaching facilities. The upgrading of teaching facilities has included the construction of a purpose-built shared core teaching facility including a microbiology laboratory. A refurbishment of Department-specific laboratories has been complemented by respective subject specific equipment upgrades (including key texts) to support more specialized teaching in the three departments.

Recommendations

This impact Assessment has yielded a series of recommendations based on the comments of the respondents:

Recommendation 1. Continuation of the Project

Continuation of the implementation of project activities to create and complete a disease free zone for foot-and-mouth disease as planned. Continue to implement surveillance of pests and diseases of crops and forest, TAD, food samples, animal vaccination and sampling for animal immunity. Continue support for entrepreneurs in the field of food safety and technology. Continue the project to further support on food safety. Continue the support in encouraging Food safety program and procedure, especially FBOs and drinking water plants. To secure project sustainability, high efficiency, the coordination and evaluation efforts should be increased and should be conducted on a regular basis, equipment should be provided in a timely manner, human resources in specific and technical field should be recruited.

Recommendation 2. Increased Capacity Building

For increased capacity building to be achieved, a series of specific actions may support: increased dissemination awareness and workshop training on SPS, provide more funding for training in the field of sanitation, and hotel hygiene in gastronomy/cooking, increased capacity building of specialized food technology personnel.

Training should be extended for staff at both central and local levels, specifically training to the provinces. More support should be provided on monitoring activities, more supplies and strengthen the skills of the concerned staff for sustainability of the project work.

Recommendation 3. Allocate Budget, more and more effectively

More budget and improved allocation of funds is needed, for the provinces for project implementation, in order to facilitate easy access to market for the business sectors, and creating, recruiting and relocating of specific, suitable technical staff. The lack of emergency budget in the event of an outbreak of smallpox or pest outbreaks, manifests in an insufficient allocating of funds to surveillance plans. Budget issues still cause delays in delivering supporting equipment. Aspects of the project funded in partnership with the private sector, through a Public-Private Partnership, should be expressly considered.

Recommendation 4. Improve Local Operation

To secure a timely and accurately budget allocation and support equipment supplies, collaboration with and on a provincial should be encouraged. A possible extended project duration should be extended to reach all localities. More support on specific training should be provided to the provinces. Local (provincial) budget allocation should be improved, for specialized technical responses, in particular technical training on plant protection, both of domestic and foreign origin.

Recommendation 5. Export Improvement

Export still faces difficulties since the Chinese conducted more comprehensive inspections, while there are more products in line, to export. Cross-border transportation is still facing difficulties and is time consuming due to inspections of transports and shipping documents, thus delaying shipment. The internationally accepted approach of border control through risk-based systems should be adopted and put into practice. Timely delivery of supporting equipment to facilitate export should be secured.

1. Introduction

This is the report of the assignment for the impact assessment of the project "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion".

The Asian Development Bank (ADB) approved the original Trade Facilitation: Improved Sanitary and Phytosanitary (SPS) Handling in Greater Mekong, Subregion (GMS) Trade Project in June 2012. The project aimed to strengthen institutional support and develop capacity for SPS handling in Lao PDR and Cambodia. The project has been implemented by Lao PDR Ministry of Agriculture and Forestry (MAF)⁴.

Based on the success of this initial project in its delivery of outputs, the Government of Lao PDR requested additional financing to scale up project activities, include additional provinces for support under the project, and commence nationwide rollout of the food safety management system. This has resulted in an extension of the project for the period 2018-2021 and further extension project closing date until June 2022 due to COVID19. The project aimed at facilitating greater trade in agriculture, food, and forestry (AFF) products through an increase in focus on improving SPS measures for plant health, animal health, and food safety applicable to key trade requirements of the greater Mekong subregion (GMS).

The additional financing scaled up activities in the three main outputs are:

- 1. surveillance and inspection for plant health, animal health, and food safety;
- 2. regional cooperation and harmonization for SPS measures and practices; and,
- 3. enhanced education levels and university training of SPS specialists.

This report points out results of the impact assessment, determining the changes happened to the Lao SPS systems as a result of the project's interventions and compare the project outcome before and after the project. After presenting context, objectives, outcome and output, and technical approach and methodology used, Chapter 2 describes the baseline situation at the start of the project. Chapter 3 and 4 report on the impact of the project, Chapter 3 first on the general (technical) project quality itself, concerning for example with project management, project design, project implementation, and general impact. For this, a Survey Questionnaire is used. Chapter 4 concerns with the impact of the project on the four sectors: plant health, animal health, food safety, and education, for which Key Informant Interviews were conducted.

1.1. Context

The initial project (2012-2017) was developed, based on the commitment of Lao PDR to implement the GMS regional cooperation strategy of connectivity and competitiveness. While recent investments in physical infrastructure have improved connectivity and created new opportunities for trade, governments in the region recognize that weak national legal, institutional, and operational capacity for delivering SPS services has hindered the establishment of a harmonized and robust GMS framework for SPS, which has impeded growth in exports of food products and incomes of farm

⁴ Based on Project Sheet "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project – Additional Financing", 21 February 2021.

households. Governments in the GMS need to invest in national SPS management systems from farm to table, and coordinate SPS service delivery better across jurisdictions.

The project has been successful in improving legal, institutional, and operational capacities for SPS service delivery in Cambodia and Lao PDR, including management and cooperation on essential SPS issues to be resolved in the region. Achievements under the project include market access agreements with bilateral trading partners for key AFF exports, upgrades to laboratory equipment crucial for testing and analysis of plant and animal health and food safety, and updated curricula and teaching methodology for SPS education in the Faculty of Agriculture at the National University of Laos. Under the initial project, the governments of Lao PDR have successfully pilot tested a food safety scheme involving the assessment and grading of food establishments.

Enhancing Capacity for SPS Arrangements to facilitate trade in the GMS is also supporting progress by providing for cooperation between customs and SPS agencies, regional capacity building, and the development of a monitoring and evaluation framework. National trade data show clear benefits such as the increased export volume of AFF goods resulting from improved SPS management systems under ADB's support. For example, under the framework of market access agreements with bilateral partners, rice exports from Lao PDR to the People's Republic of China have increased with an average growth rate of 521%, between 2013 and 2020⁵. Other AFF products experienced robust export growth to China in this period, such as corn (29%) and cassava (54%).

Despite this progress, additional financing has been required to support reforms in Lao PDR to enhance SPS institutions and operational capacity in line with the country's GMS commitments. The initial project focused on improved surveillance and monitoring of plant health, animal health, and food safety in three provinces, while additional provinces such as Savannakhet and Oudomxay also require support under the project.

Additional financing aimed at facilitating the rollout of a national food safety management system, including a ratings scheme of food establishments, to improve food safety for the population and visitors to Lao PDR. Additional financing also should address that through enhancing food safety in Lao PDR would boost its reputation as a tourism destination, which deemed imperative as tourism accounts for 6.4% of gross domestic product. The first batch of food science students from the project graduated in 2018, and additional investments would be needed to ensure a sufficient number of qualified food safety experts in the long term.

1.2. Objectives of the Impact Analysis

As described in the Terms of Reference (ToRs), the immediate objective of this assignment was to determine the changes happened to the Lao SPS systems as a result of the interventions of the project "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project - Additional Financing". The period of this Additional Financing project is 2018-2021⁶. It is noted that the initial project "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project" had started in 2012, with a project duration from 2012 to 2017.

⁵ The rice export to China between 2013 and 2020 (in USD): 859.156 (2013), 1.288.556 (2014), 7.405.987 (2015),

^{14.197.310 (2016), 5.588.049 (2017) 7.253.207 (2018), 11.542.606 (2019), 32.184.849 (2020).}

⁶ The effectivity date of the project is 5 Jan 2018, the closing date is 30 June 2021.

In assessing the impacts, this assignment also included how the project's interventions have contributed to the overall objective of the initial project: that AFF products will become safer, more efficiently produced, and traded in greater quantities. It also assessed to which extent the project's result has aligned with Lao PDR Ministry of Agriculture and Forestry's Agricultural Development Strategy, 2011-2020⁷⁸, ADB's Country Partnership Strategy 2017-2020, Lao PDR's 8th National Socio-economic Development Plan (2016-2020), and the National Strategy for Agricultural Development (2011-2022).

1.3. Impact Assessment and Outcome and Output of the Project

In Impact Assessment methodology, overall objectives and so-called immediate objectives are identified. The Impact Assessment subsequently focuses on the immediate objectives⁹. In this project, the Outcome may be regarded as the overall objective, an enhanced SPS management system. The immediate objectives correspond with three outputs, a strengthened surveillance and inspection programs for Plant Health, Animal Health and Food Safety, an improved regional cooperation and harmonization, and enhanced education levels/university training of SPS Specialists. The Outputs contribute to the Outcome. See Figure 1.

Overall Outcome of the Project

The overall outcome of the project "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project" is an **enhanced SPS management system**, and the Additional Financing project stage has built further on this.

The project's interventions should also have contributed to the overall objective of the initial project that AFF products will become safer, more efficiently produced, and traded in greater quantities and aligned with Lao PDR Ministry of Agriculture and Forestry's Agricultural Development Strategy, 2011-2020. Specification of the immediate objectives are increased formal trade in AFF products to GMS (annual value up 10-15%), reduced incidence of food-borne diseases and related morbidity and mortality, and loss of productive time for consumers by 10%, tourism arrivals increase (5-10% up annually), and lower SPS-related border transaction costs for traders (at least 20% from 2010).

Outputs

The three defined Outputs of the project "Trade Facilitation: Improved Sanitary and Phytosanitary (SPS) Handling in Greater Mekong, Subregion (GMS) Trade Project – Additional Financing" are:

- a strengthened surveillance and inspection programs for Plant Health, Animal Health and Food Safety;
- an improved regional cooperation and harmonization, and;
- enhanced education levels/university training of SPS Specialists.

The results of the impact assessment of the project's interventions have been focusing on these

⁷ See Project Sheet "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project – Additional Financing", 21 February 2021.

⁸ Strategy for Agricultural Development 2011-2020, Lao PDR Ministry of Agriculture and Forestry, September 2010.

⁹ See for example: Commonwealth Standards Network, Regulatory Impact Assessment Manual, 5 April 2019.

three Outputs.

Output 1: Strengthened Surveillance and Inspection Programs for Plant Health, Animal Health and Food Safety.

- Plant Health. Activities under this output are being implemented by the MAF's Plant Protection Center, which include (i) pest surveillance and pest list development, (ii) pesticides management, (iii) wood products in the GMS, (iv) import handling, (v) export promotion, (vi) laboratory services, and (vii) bilateral cooperation. Implementation of these activities are progressing well, including surveys for the update of prohibited pests list (plant diseases and insect pests) have been conducted in 18 provinces covering 30 priority crops.
- Animal Health. This component is being implemented by the MAF's Department of Livestock and Fisheries. Activities include (i) Transboundary Animal Diseases (TAD) control, (ii) veterinary drugs inspection, (iii) animal feed inspection, (iii) food chain safety, (iv) import handling, risk-based management and implementation of the strategy for managing illegal animal trade, (v) reporting (participation in GMS countries, OiE, SEACFMD), and (vi) regional cooperation. Implementation of these activities are progressing.
- Food Safety. This component is being implemented by the Ministry of Health's Department of Food and Drugs Control. Activities include (i) surveillance system upgrade, (ii) tourist industry support, (iii) market access study, (iv) import handling, and (v) laboratory services. Implementation of these activities are progressing.

Output 2: Improved Regional Cooperation and Harmonization.

Activities under this output focus on regional cooperation and harmonization in SPS. These has been further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety. Bilateral and regional meetings/workshops planned to be conducted in 2020 were cancelled due to COVID-19 pandemic. Online meetings are being arranged.

Output 3: Enhanced Education Levels/University Training of SPS Specialists.

The Faculty of Agriculture of the National University of Laos is leading the implementation of this output. Activities include (i) curricula development, (ii) departmental laboratory and teaching equipment upgrade, and (iii) regional scholarship program. Implementation of these activities are progressing.

Figure 1. Outcome and Outputs of the project.

Outcome:

Enhanced SPS Management System

(AFF products safer, more efficiently produced, and traded in greater quantities)

Output 1:

Strengthened Surveillance and Inspection Program Output 2:

Improved Regional Cooperation and Harmonization

Output 3:

Enhanced Education Levels and university training of SPS specialists

1.4. Technical Approach and Methodology

This report compares the project outcome before and after the project (note, this is the "Additional Financing" project). For this, in coordination between an International and National Impact Assessment Specialist, the data collection and analysis has been conducted, through a number of activities, including desk review, consultation (interviews, workshop), and a survey.

The primary research on data collection through the survey has been the main component of the project since it also is used to build capacity on data collection skills of government staff from within the governmental stakeholder groups. The International Impact Assessment Specialist in coordination with National Impact Assessment Specialist have performed the following tasks:

1. Review the Project Administrative Manual (PAM), Project Quarterly Progress reports and other related documents.

The Review should include (but, are not limited to) the following documents:

- Project Administrative Manual, Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary (SPS) Handling in Greater Mekong Subregion (GMS) Trade Project, June 2012. Period 2012-2017.
- Project Administrative Manual, Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade, Project Additional Financing, September 2017. Period 2018-2021.
- Quarterly Progress Reports of both mentioned Periods.
- Appendices to the Project Administration Manuals, such as the Design and Monitoring Framework, updated as of 30 September 2017 (Appendix 4), and updated as of 31 December 2020 (Appendix 5).
- Annual Reports.
- Mid-Term Reports, such as the Mid-Term Report (Report No. 11), Project Inception to 30 September 2015, 19 October 2015.
- Financial Management Assessment Report, Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade, Project -Additional Financing, 2020.
- Lao PDR Ministry of Agriculture and Forestry's Agricultural Development Strategy, 2011 -2020.
- ADB's Country Partnership Strategy 2017-2020.
- Lao PDR's 8th National Socio-economic Development Plan (2016-2020).
- National Strategy for Agricultural Development (2011-2022).
- Agriculture Development Strategy 2025 and vision to the year 2030 (issued in May 2015)
- Research Reports, such as "Sanitary and Phytosanitary (SPS) Measures: Status Report on Agricultural Trade between Cambodia, Lao PDR, Vietnam and China", Support for Economic Cooperation in Sub-Regional Initiatives in Asia (SCSI), GIZ, December 2017, or the "Project Performance Assessment Report of Lao PDR Trade Development Facility", by IEG/World Bank Group, June 2018.

2. Review the changes before and after the project for plant health, animal health, food safety and education based on the outcome and output of the project.

On the basis of the documents review, the changes before and after the project for plant health, animal health, food safety and education based on the outcome and output of the project are assessed and mapped.

3. Design the questionnaire and methodology for the data collection from Component Implementation Units (CIUs), Line Ministries, Provincial Agriculture and Forestry Office (PAFO), traders, Food Business Operators (FBOs), Farmers and others.

To meet the objectives of the impact assessment assignment, primary research was required to assess the changes before and after the project based on the outcome and output of the project. The relevant stakeholders are: the Component Implementation Units (CIUs), the Line Ministries, the PAFOs, traders, Food Business Operators (FBOs), farmers, and others. To the latter, 'other' stakeholders could be for example: staff of the GMS National Secretariat, Project Steering Committee, and/or the Project Technical Advisory Committee (PTAC). Line ministries are primarily: the Ministries of Agriculture, the Ministry of Health, and the Ministry of Education and Sports.

The CIUs give substance to the commitment of Lao PDR to implement the GMS regional cooperation strategy of connectivity and competitiveness While recent investments in physical infrastructure have improved connectivity and created new opportunities for trade, governments in the region recognize that weak national legal, institutional, and operational capacity for delivering SPS services has hindered the establishment of a harmonized and robust GMS framework for SPS, which has impeded growth in exports of food products and incomes of farm households¹⁰. For this, in Lao PDR CIUs have been established.

There are four CIUs. The first is the **Plant Health CIU**, located at the Plant Protection Center (PPC) of Department of Agriculture (DOA) of the MAF. The second is the **Animal Health CIU**, located at the Department of Livestock and Fisheries of the MAF. The third CIU is the **Food (Safety) CIU**, located at the FDD of the Ministry of Health. And the fourth is the **Education CIU**, located at the Faculty of Agriculture of the National University of Laos. Each CIU consists of app. 60 government staff, located at the Ministry as well as in the provinces¹¹. The implementation arrangements of CIUs are described in detail in the Project Administration Manual.

Primary research constitutes the major component of this impact assessment, complemented by the desk review, such that the impact is assessed incorporating the views of the relevant stakeholders, through both a survey with quantifiable results, and a series of interviews, which resulted in qualitative information. The requirement of an evaluation on capacity building in impact assessment and data collection, as well as the engagement of the relevant stakeholders in training on data collection and analysis, underlined primary research as the major component of this assignment.

Steps of the Methodology:

• Setting the objectives.

¹⁰ Report and Recommendation of the President to the Board of Directors: Proposed Grant for Additional Financing Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project, ADB, September 2017.

¹¹ Based on shared information during the Kick-Off Meeting of 31 March 2021.

- Selecting the sample of respondents.
- Designing Preparing a reliable and valid Survey & Interview Questionnaire.
- Doing the Survey, and conducting the interviews.
- Managing and analyzing the data.
- Reporting the results.

For the Questionnaire Design, the following steps were followed: decide the information required, define the target respondents, choose the method(s) of reaching the target respondents (this maybe through interviews, telephonic interviews or by sending a survey). The next step was determining the question content, selecting the question type (closed/open questions, answer categories), and developing the question wording. The question sequence was designed, by putting the questions into a meaningful order and format.

Finally, the length of the questionnaire has been checked, the questionnaire has been pre-tested by the SPS PMS Team with the PMU, upon the survey was finalized. Incorporating final edits with a view towards conciseness and clearness, apparent relevance, importance and interest to the respondent.

The survey has been conducted through e-mail. Reminders to have been sent to those who received the survey. The questionnaire has been accompanied with an invitation to participate in the survey by the PMU.

4. Design and Evaluation of Human Resource Capacity Building relating to Curriculum Development, teacher training and graduate's field study.

The design and evaluation of Human Resource Capacity Building relating to Curriculum Development teacher's training and graduate's field study concerns with Impact Assessment & Data Collection. During the consultation with stakeholders, the training of government counterpart staff, as well as through survey questions, human resource capacity on (project) impact assessment and data collection has been addressed in terms of needs, gaps, and requirements. Staff training and capacity building should improve the institutional performance and capacity in particular in the CIUs and the PMU¹².

5. Conduct consultation with PMU and CIUs to finalize the indicators and data collection formats.

Officials of the PMU and CIUs have been consulted on the indicators and data collection format. This was largely done in conjunction with designing the questionnaire. In particular the outputs of the project, strengthened Surveillance and Inspection Programs for Plant Health, Animal Health and Food Safety, improved Regional Cooperation and Harmonization, and enhanced Education Levels/University Training of SPS Specialists, help to measure what actually happened in terms of quantity, quality and timeliness against what was planned.

6. Prepare appropriate sample size to meet the requirement for data collection.

Sampling is a process used in statistical analysis in which a predetermined number of observations are taken from a larger population. Sampling is the selection of a subset (a statistical sample) of

¹² See also: Report and Recommendation of the President to the Board of Directors: Proposed Grant for Additional Financing Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project, ADB, September 2017.

individuals from within a statistical population to estimate characteristics of the whole population. It is a statistical method of obtaining representative data or observations. Assessing the sample from a larger population depends on the type of analysis being performed. The sample should accurately reflect the distribution of relevant variable in population in terms of Business or organization (type, size), place (urban, rural), and representativeness essential to generalize the results (ideally in statistical significant terms). The sample size was set at 160, 27% of the estimated Survey population (600).

See Appendix X & XI.

7. Develop action plan for the coordination with CIUs, Line Ministries, PAFOs, traders, FBOs, Farmers and others for data collection.

To support the coordination of data collection with CIUs, Line Ministries, PAFOs, traders, FBOs, Farmers and other relevant stakeholders, an action plan has been drafted with the course of action to collect the relevant data, thus including the CIUs, Line Ministries, PAFOs, traders, FBOs, Farmers and others' assistance in the data collection process.

8. Train the government counterpart staff to assist the consultant in data collection.

Goal of the training¹³ on data collection for government officials:

- Understand what data collection is, measuring the efficiency and effectiveness of a project and/or (policy) options.
- Develop research questions and link them to monitoring methods.
- Understand differences between quantitative and qualitative data and their application.
- Be familiar with different methods for collecting quantitative data and basic concepts of probability sampling.
- Interpret multiple sources of data and develop evidence-based conclusions and recommendations.
- How to manage and report monitoring data.

Training Program of the Government Staff Training for Data Collection

To support this assignment in data collection and analysis, the government counterpart staff has been trained. For this, a tailored Data Collection training has been developed. The schedule of the training was:

	✓ Context
Day 1. Introduction to Data Collection 8 Analysis	✓ Session 1: Introduction to Data Collection &
Day 1: Introduction to Data Collection & Analysis	Analysis
	✓ Session 2: Overview Main Data Collection

¹³ For context and reference, it may good to note that during the project (before, the Additional Finance stage), as of 31 August 2017, there has been 660 participants of PMU, and CIUs government staff training in food safety handling and good manufacturing practice. Source: Report and Recommendation of the President to the Board of Directors: Proposed Grant for Additional Financing Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project, ADB, September 2017.

	Techniques
Day 2: Data Collection Techniques	 ✓ Session 3: Questionnaires and Sampling ✓ Session 4: Consultation
Day 3: Data Analysis + Data Recording & Management	 ✓ Session 5: What is Data Analysis? ✓ Session 6: What is an Indicator? ✓ Session 7: Data Management & Reporting

9. Conduct the visit to CIUs, Line Ministries, PAFOs, traders, FBOs and farmers for collecting the data.

The questionnaires, the Survey Questionnaire and the Interview Questionnaire, developed for this project has been conducted either via e-mail or live one-on-one interviews with the relevant parties, CIUs, line Ministries, PAFOs, traders, FBOs and farmers.

10.Conduct the data analysis and prepare comparative graphics and tabulation to show the changes before and after the project.

The result of the questionnaire has been analyzed. Where possible, the questionnaire was designed in such a way, that the response may be quantified, this particularly concerned with the Survey Questionnaire. This was done either through closed questions with defined answer categories, or through inquiring values. Of the response - this project being an impact assessment and to allow for 'deeper' questions, part of the data collection has been qualitative, based on open questions in the developed Interview Questionnaire.

The data analysis consisted of weighted or unweighted counts of the response to questions.

11.Conduct meetings with CIUs and PMU to discuss the result of the survey.

The result of the survey, through a data analysis report shared, has been discussed with the CIUs and the PMU.

12. Develop draft survey report and organize workshop to present the results.

After the discussion with the CIUs and PMU of the results of the survey, the draft survey report has been developed, with acknowledgement of the collected feedback and views of the CIUs and PMU. A workshop has been organized to present the results to all of the survey-participating stakeholders: CIUs, Line Ministries, PAFOs, traders, FBOs, Farmers and others.

13.After the workshop, finalize the report and produce the final survey report.

With the input of the workshop results incorporated, the final survey report has been drafted.

2. The State of SPS Management in Lao PDR at the start of the Project

The prime overall objective of the Project has been Enhanced SPS Management System. The project's interventions should also have contributed to the overall objective of the initial stages of the Project, stating that AFF products should have become safer, more efficiently produced, and **traded in greater quantities.** Specification of the immediate objectives were expressly also focused on increased formal trade in AFF products between Lao PDR and the GMS, with a projected annual growth value up 10-15%.

2.1. Increased formal trade in AFF products to GMS

Formal Trade in AFF products between Lao PDR and the GMS-countries¹⁴ has outperformed the projected annual growth value of 10-15%. The average annual growth of Trade in AFF products has been 38%, since 2013. Export of AFF products is almost twice the volume of the imports.

The total export of AFF products from Lao PDR to GMS countries in 2020 was a little over 2 billion USD (2.016.977.285) with an average annual growth rate of 31%, whereas the total import to Lao PDR from GMS countries in 2020 was 1.175.615.422 USD, with an average annual growth rate of 53%. See Table 1.

This means considerable growth in AFF products trade across the board has been achieved, with imports growing at a stronger pace than exports.

In USD	2013	2020	%	Average annual % change 2013-2020
Export	630.787.210	2.016.977.285	219,76%	31
Import	248.608.309	1.175.615.422	372,88%	53
Total Trade	879.395.519	3.192.592.707	263,04%	38

Table 1. Trade in AFF Products between Lao PDR and GMS-countries, 2013-2020.

Export and Import AFF products between Laos and GMS

During the period of the implementation of the project, considerable fluctuations were visible in both export and import of AFF products. See Figure 2 and 3.

Export

In 2014, the export fell back with 4%, from a 630.787.210 USD in 2013 to 604.445.451 USD. It resumed the next year with a considerable growth rate in 2015 (+52%). The following years showed consistent however slightly declining growth rates, until 2020 where exports experienced a marginal decline. Most probably the latter has been an effect of the COVID-19 situation.

Import

In 2014, the import grew considerably with 40%, although overall import volumes of AFF products from GMS countries were still relatively low, worth 248.608.309 USD in 2013. In 2015 AFF product imports declined with 21%, only to rebounce greatly the following year, 2016, with a quadrupling of the import of food products (from 72.065.445 USD to 248.805.724 USD, mostly imports from Thailand), almost a doubling of plant products to 294.911.735 USD (with a share of 70% also mostly from Thailand), and a solid growth of animal product imports to 74.586.804 USD.

The years 2017-2019 show a steady increase in growth rate of imports, only to fall back once more in 2020 to just 1% growth. Like with the export situation, the latter may be contributed to the COVID-19 situation.

¹⁴ Thailand, China, Vietnam, and Cambodia.



Figure 2. Export development AFF products from Lao PDR to GMS-countries (in % annual change).





2.2. Export and Import AFF Products between Lao PDR and GMS, per Sector, per Country

Plant Exports are Dominant, Vietnam remains the main Export Destination with China and Thailand coming up¹⁵

Seventy-five percent of exports of AFF products from Lao PDR to the GMS countries, are plant products. Animal and food products shares consist both of a 12-13%, with animal products exports having seen a considerable growth since 2019.

The most important export country remains Vietnam, with China exports growing in importance. Exports of AFF products to both countries value one and a half billion USD in 2020. Thailand exports are also growing, especially between 2019 and 2020 with reaching a value of almost 400 million USD. The export to Cambodia remains quite low, and is - also compared to the other GMS countries - almost non-existent.

Annual Development of export of AFF products from Lao PDR to GMS-countries¹⁶

The dominant plant sector shows an average annual growth rate of 25%, the food sector imports grow at a faster pace, namely 32%. The export of animal products from Lao PDR to the GMS countries used to be insignificant (2013: 8.240.762 USD). It has recently started booming, with accompanying huge growth rates. Especially the exports of animal products to Vietnam has increased greatly, only between 2018 and 2019 these exports almost tripled, from 81 million USD to 222 million USD.

Since 2012, the export of AFF products to both Vietnam and China show average growth rates of 20%. The export to China is catching up and shows an average annual high growth rate of 72%.

Import of a balanced product mix of the plant, food and animal sectors, Thailand by far the Dominant Importer¹⁷

Despite that also the plant sector is largest in imports of AFF products to Lao PDR, the food sector has strongly gained in volume. Overall, in recent years (2020) the imports seems quite balanced over the three sectors, plant, animal and food, with each sector valuing imports of around 400 million USD. .

Striking is that by far the most imports originate from Thailand. Seventy-five percent of imports of AFF products to Lao PDR come from Thailand (2020), 11 percent from China, and 14% from Vietnam, while the imports from Cambodia remain neglectable, and are overall even declining. With Thailand importing twice as much as both China and Vietnam, the plant imports are still somewhat comparable between the GMS countries, in particular China and Vietnam. However, in animal and food products Thailand is by far the dominating import trading partner of Lao PDR.

Annual Development of import of AFF products to Lao PDR from GMS-countries¹⁸

The animal imports have shown the highest growth rate, as with the export is the case, primarily

¹⁵ See Appendix I.

¹⁶ ¹⁷ See Appendix III.

¹⁷ See Appendix II.

because it has come from quite an insignificant position. Animal product imports from the GMS grew from 18.6 million USD in 2013 to 360 million USD in 2020. The Plant sector being also dominant in imports - though less pertinent as it the case with the AFF product exports - has a steady average annual growth rate of 21%, since 2013. The food sector imports are developing rapidly and firming, with an average growth of 92% per year.

Imports of AFF products from Vietnam show the highest average annual growth rate of 46%, since 2013. China and Thailand follow with respectively 34% and 19%.

3. Technical Impact Assessment of the Project

3.1. Project Arrangements

The impact assessment of the project concerns with a technical assessment consisting of a series of project arrangements. For this project, these are defined through the project relevance, design, implementation, outputs and their sustained effect/impact, cost-effectiveness and project features for improvement.

3.2. Project Relevance

The relevance of the project is primarily determined by the extent to which the Sanitary and Phytosanitary (SPS) Handling is improved. Besides that, indicators of the project relevance are the cost-effective response to the improved SPS Handling, whether the project has been part of a coherent national program (to improve animal and plant health and food safety), the level of resources committed the project, and the sustainability of the project - or, whether the project outputs are expected to continue to be used after the project.

Project assessed relevant to SPS Handling, fitting in a national program, and sustained outputs, less relevant to cost-effectiveness and committed national resources

The project appeared important to the SPS Handling, not surprisingly. The project is also greatly part of a coherent national program, and project outputs are expected to sustain. Although also the project contributed to a cost-effective response to improved SPS Handling, as well as national resources committed to the project, the project turns out to be the least effective or relevant to these aspects. See Figure 4.





^{5 =} yes, to a very major problem 4 = yes, to an important problem 3 = yes 2 = hardly 1 = not at all

3.3. Project Design

The design of the project has been captured by the following indicators:

- Immediate Objectives including specification of Targets.
- Specification of Beneficiaries.
- Specification of Outputs and Output Targets.
- Specification of inputs: donor national.
- Validity and sufficient availability of means, ends relationship between inputs, outputs and objectives.
- Implementation arrangements and managerial structure.
- Existence of specified Work-plans including timing of inputs, activities and outputs.
- Identification of prerequisites and risks for project success.
- Linkages with other related institutions and organizations.

Specification of Immediate Objectives, Targets, and Beneficiaries

The overall outcome of the project "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project" is an **enhanced SPS management system**, and the Additional Financing project stage has built further on this.

The main beneficiaries are the four CIUs. Other beneficiaries are: the Ministry of Agriculture and Forestry, Ministry of Health, Ministry of Education, FBOs, PAFOs, Line Ministries, Traders, and Farmers. Others beneficiaries are: GMS National Secretariat, Project Steering Committee, Project Technical Advisory Committee (PTAC), District Agriculture and Forestry Extension Office (DAFEO), Quarantine Offices, and Laboratories.

Project Design most clear and relevant on Beneficiaries, Outputs, Linkages, and Risk Identification, least on Available Funds and Project Management

Specification of beneficiaries, Output and Output Targets, linkages with other institutions/organizations, and risk identification, are considered the most clear and relevant elements in the project design. Available funds - through specification of inputs, and availability of means, and project management - through existence of specified work-plans and implementation arrangements, are assessed on being the least relevant, in terms of least engaged in, in the project. See Figure 5.



Figure 5. Assessment of project design.

- 5 = excellent
- 4 = good/more than Satisfactory
- 3 = satisfactory/average/adequate
- 2 = weak/less than satisfactory
- 1 = poor

Project Duration less than Satisfactory, Project Size Merely Adequate

Although both the perceived impact of Project Size and Project Duration is scored around satisfactory, average, and adequate¹⁹, expressly the project duration is assessed less than satisfactory and too short, and the project size just about right yet still too small. See Figure 6.

3.4. Project Implementation

The appreciation of the project implementation has been defined by the following elements: donor inputs, national inputs, internal management, external support/inputs to management and implementation, and an overall assessment of the input to project management/implementation.

Donor Inputs, are further specified by: budgetary disbursements, project personnel including consultants, equipment and construction, and fellowships/study tours and other formal training. National inputs are specified by: budgetary disbursements, personnel, equipment and physical infrastructure. Internal Project Management, by project implementation reporting, work-planning and monitoring, coordination and relation with other organizations/departments, flexible management response to problems/and or changed circumstances.



Figure 6. Assessment of project size and project duration.

- 2 = weak/less than satisfactory
- 1 = poor

^{5 =} excellent

^{4 =} good/more than satisfactory

^{3 =} satisfactory/average/adequate

¹⁹ Around the score: 3.

External Support/Inputs to Management and Implementation is specified by: technical support by ADB and or/other agencies, administrative support by ADB and/or other agencies, management support/decision making by donor(s), and the assessment of the evaluation and the review processes.

Assessment of Project implementation shows considerable Differences, by Province, by Sector

The assessment of the project implementation has been scored quite differently over the 7 surveyed provinces. Three provinces, Savannakhet, Xiengkouang and Luangprabang have scored the quality of the project management the highest, with both above the score "Good/Above average. Two provinces, Vientiane and Oudomxay, scored well above Satisfactory/Average level. Xayabouly, and Luangnamtha scored lowest with just under Satisfactory/Average. See Figure 7.

Possibly, the sector plays a role in these scores too, the lower scores are from the Plant sector, while the higher scores are Food & Drugs and the Animal Sector.



Figure 7. Assessment of the project implementation, per province.

5 = excellent

- 4 = good/above average
- 3 = satisfactory/average
- 2 = less than satisfactory
- 1 = very poor

3.5. Project Outputs & Sustained Effects and Impact

The three Project Outputs are further operationalized through:

- Output 1: Strengthened Surveillance and Inspection Program, via for example annual surveys of pest and disease information for priority crops, surveillance of transboundary animal diseases, and annual food safety survey and inspection;
- Output 2: improved regional cooperation and harmonization, for example via active participation in regional and international gremia, and bilateral working groups; and,
- Output 3: enhanced education levels and university training of SPS specialists, for example via teaching and laboratory facilities, plant pest and disease, animal pest and disease, food safety curricula upgraded, with associated teaching materials, and post-graduate trainees completed courses (annual internships).

The Outcome of Enhanced SPS management systems is further operationalized by for example: market assessment agreements, effectiveness of animal disease outbreak response, effectiveness of food hazard response (Good Hygiene Practices), effectiveness of pest outbreak responses and becoming more reliable trading partners in Lao PDR and Cambodia, China, Vietnam and Thailand.

Highest impact: Strengthened Surveillance and Inspection Programs. Lowest: Improved Regional Cooperation and Harmonization

One of the major conclusions of this Impact Assessment is that the highest impact has been achieved in the strengthening of surveillance and SPS inspection programs, through project results like annual surveys of pest and disease information for priority crops, surveillance of transboundary animal diseases, annual food safety surveys and inspection. Province of Luangprabang (Food & Drugs) scored very high, with well above Considerable on average (4.4) and with many respondents indicating the highest score of "Very substantial". The provinces of Oudomxay (Plant Sector), and Xayabouly (Plant Sector) scored relatively lowest, with still an overall assessment towards Considerable.

The least impact has been achieved in improved regional cooperation and harmonization, through active participation in regional and international gremia, and bilateral working groups. In particular, the province Oudomxay (Plant Sector) scored relatively low. See Figure 8.



Figure 8. Assessment of the project outputs, in sustained effects and impact.

2 = slight

1 = none or negligible

3.6. Cost-Effectiveness of the Project

The cost-effectiveness of this project has been assessed through answering the questions if the most least cost way have been chosen to achieve planned output & sustainable effects, and if substantial cost over-runs (extension of budget) have occurred to complete the project.

The cost-effectiveness of this project was further measured in detail through cost-effective use of a number of project elements: use of national experts, use of International experts, reliance on existing Government capacities, national training, use of short-term staff, use of NGOs, use of the Private Sector, concentration on key/central objectives/outputs (focus), delegation of authority and quantity of resources.

This resulted in the overall assessment of the cost-effectiveness of the project, depicted in quantity and effectiveness in Figure 9.

Cost-effectiveness of the Project scored lowest of Project Arrangements

Five of the seven surveyed provinces responded to the question of the overall assessment of the Cost Effectiveness of the Project: Xiengkouang, Animal Sector, Luangprabang, Food & Drugs, Vientiane Province, Food & Drugs, Oudomxay, Plant Sector, Xayabouly, Plant Sector. Overall, the cost-effectiveness of the project has scored lowest. Both the quantity of the funds and the effective application score low, whereby the quantity of the funds made available still favors over the

effective application of the funds. Quantity scored a mean of 3.21, whereas the effectiveness was scored at 2.87, in the area of less than Satisfactory. Acknowledged is though, that on specific parameters like savings in Technical Assistance (including, addition of trainings in Technical Assistance contract) and cost savings in procurement, the project has been implemented in a highly cost-effective manner.

The scores per province are comparable, except for the province of Xayabouly (Plant Sector). With scores far below 'Less than satisfactory' on both quantity 1.41, and effectiveness 1.27, this province is the least content with the cost-effectiveness of the project.²⁰



Figure 9. Assessment of the cost-effectiveness of the project.

- 2 = less than satisfactory
- 1 = very poor

3.7. Project Features for Improvement

Most Room for Improvement on Project Selection

The room for improvement for specific project selection is geared the most towards considerable. Hence, effective project selection deserves more attention. To a lesser extent, between some and

²⁰ A finding of this Impact Assessment is that the Plant Sector is the sector in need for more support. This is despite plant sector has signed 40 MOUs against the target of 6 and also developed the pest lists for more crops than the targets. This may be explained that the Plant sector is the most important sector of Laos trade in AFF products, with 75% of AFF product exports and 38% of AFF product imports, in 2020.

considerable there is room for improvement in project implementation and management, as well as project design. Project supervision and adjustment is considered relatively good, with the least room for improvement. See Figure 10.



Figure 10. Assessment of room for improvement of relevant project aspects.

Need for Improvement in Participation, Performance and Sustainability

Of the identified relevant aspects, the most pertinent need for improvement is on involvement and participation by beneficiaries, the performance of national institutions, and national financial resources to follow-up on the project. See Figure 11.

Realism and sense of priority seems present

There seems sufficient social and political realism, as well as a sense of priority and commitment to improved SPS management, considering these two aspects show relatively little need for improvement.



Figure 11. Assessment of the need for improvement of relevant project aspects.



3.8. Project Management

The impact of project management has been assessed based four indicators, quantity & quality, and effects & impact, for the following six criteria:

- Project Management Unit (PMU) to be managed by local staff, with advisory support from international expert, to continue administering improved SPS management mechanisms.
- Technical advisory and National Steering Committee meetings.
- Quarterly and Annual project review report, project monitoring and evaluation.
- At least 50% of female staff in PMU.
- English proficiency training for key project staff.
- Maintain and operate PMU in accordance with Financial Management Manual, Procurement Manual and Monitoring and Evaluation framework prepared by end-2012, ADB and Government rules/legislation.

Highest impact from maintaining and operating the PMU, need for improvement of English proficiency emphasized

In the overall assessment of effects and impact, the effects score considerable higher than the impact. The criteria are scored considerable on the effects, and between some and considerable on the impact²¹. All criteria score well Good/Above average²² - including the Overall Assessment of project management, except for the English proficiency training for key project staff which although it scores satisfactory/average, seems to leave improvement to be desired.

It is no surprise that the highest impact is experienced and expected from maintaining and operating the PMU in accordance with Financial Management Manual, Procurement Manual and Monitoring and Evaluation framework prepared by end-2012, ADB and Government rules/legislation. What is remarkable also, is that while English proficiency training for key project staff seems to leave a lot to be desired to in terms of quantity and quality, it scores second-highest on experienced and expected impact. This underscores the relevance of English proficiency training for key project staff, and the need to improve this. See Figure 12 and 13.



Figure 12. Assessment of project management, quantity and quality.

^{2 =} less than Satisfactory

^{1 =} very poor

²¹ Remarkable is, that no respondent assessed the effects and impact on Technical advisory and National Steering Committee meetings.

²² Mean score: 4.


Figure 13. Assessment of project management, effects and impact.

- 4 = considerable
- 3 = some
- 2 = slight 1 = none or negligible

4. Impact Assessment of the Project, per Sector

4.1. Beneficiaries

The impact of the Project is assessed by focusing on the three following sectors and their main beneficiaries:

- Plant Health: main beneficiary, Plant Protection Center (PPC). Under this component, necessary
 interventions target at raising the capacity of the Plant Protection Center (PPC) to better carry
 out pest and disease surveillance activities, including: crop pest surveillance; diagnostics and
 taxonomic identification; post-entry quarantine (PEQ) for seed and other propagative plant
 materials; and, response to plant pest and disease outbreaks. In order to build surveillance and
 monitoring capacity for plant pests and diseases, survey-based data gathering and management
 has been strengthened and diagnostic and analytical services has been improved.
- Animal Health: main beneficiary, Department of Livestock and Fisheries (DOLF) and the Food and Drug Quality Control Center (FDQCC). DOLF is the CIU of Animal health component. DOLF focuses on surveillance of transboundary animal diseases established in two provinces in the Lao PDR and Established risk-based surveillance and awareness of transboundary animal diseases in 4 provinces in Lao PDR.

 Food Safety: main beneficiary, the Food and Drugs Department (FDD) of the Ministry of Health (MOH). The FDD comprises the CIU that is implementing the food safety program. FDD focuses on risk-based, programmed annual food safety surveys and inspection capacity established in 6 provinces of Lao PDR introduced with annual reporting showing a reduction in subsequent reported food outbreaks in those provinces and upgrade the national food laboratory.

See Table 2.

Table 2. Assessment three main Outputs per sector.

Output	Sector
Strengthened Surveillance and Inspection Programs	Plant HealthAnimal HealthFood Safety
Improved Regional Cooperation and Harmonization	 Plant Health Animal Health Food Safety
Enhanced Education Levels/University Training of SPS Specialists	 Plant Health Animal Health Food Safety

4.2. Output 1: Strengthened Surveillance and Inspection Programs

4.2.1. Plant Health

Under this component, necessary interventions have been targeted at raising the capacity of the Plant Protection Center (PPC) to better carry out pest and disease surveillance activities, including: crop pest surveillance; diagnostics and taxonomic identification; post-entry quarantine (PEQ) for seed and other propagative plant materials; and, response to plant pest and disease outbreaks. In order to build surveillance and monitoring capacity for plant pests and diseases, survey-based data gathering and management were strengthened and diagnostic and analytical services were improved. For the latter, a data collection training has been developed and conducted to government staff.

Increased capacity of the PPC

Impact on capacity of the Plant Protection Center

The project's interventions impacted the raising of the capacity of the Plant Protection Center (PPC) to better carry out pest and disease surveillance activities through the following:

• Plant Protection Center has the equipment and tools for field surveys, for the laboratory at the center, the full range of potential vehicles, that able to fully support the work.

• Pest monitoring team has the ability to take action and solve problems in a timely manner.

Additional pest lists have been developed, in particular pest lists of sweet potato, and beans and the list of rice, corn, watermelon, cassava, banana has been updated.

This has resulted in further successful market access agreements with bilateral trading partners, through improved trust and readiness with all the essential documents for the trading partners.

Upgrading of fertilizer and pesticide analysis

Upgrading of fertilizer and pesticide analysis may be achieved by participation in proficiency testing, encouraging better quality of laboratory practice. Enhanced monitoring of pesticide residues on farm produce have been achieved through annual programs of sampling and testing with rapid test kits (with provision for selected samples to be sent for more quantitative analysis for problem pesticide groups identified from the rapid test monitoring process, as well as pesticides not adequately covered by rapid testing). The Plant Protection Center has improved its laboratory infrastructure:

- A complete set of research tools and equipment has made it capable of analyzing the quality of fertilizers and pesticides, including residues in plant products
- Plant protection center staff have the ability to analyze themselves and can pass on training to the PAFOs.
- Be able to identify and inform the society about artificial fertilizers or essential inputs of the production that do not meet the quality standards

The upgrading of fertilizer and pesticide analysis has made producers aware of how to utilize fertilizer in a technical manner. A package of vegetable products that detects residues has been drawn up, and the vegetables that have residues are consequently destroyed. A list of plants and fruits indicating which are safe and which are not, allowing consumers to have information on choosing safe products, has been drafted.

Impact on Trade

National situational analysis and data sharing

Under the forest health and SPS compliance of trade in forest products, a national situational analysis of the forest pest situation and phytosanitary requirements has been made. The results have been imposed by importing countries, establishing a program of passive surveillance and engaging in regional consultation, that provides a forum to identify common issues, weaknesses and opportunities for countries to work together to mainstream forest health into their national SPS compliance processes. For this, the PPC applied the same protocol and regularly sharing updated pest information among Asia, and direct trading partners.

Risk-based import management system

The project has introduced a risk-based import management system that includes: (i) risk categorization; (ii) development of standard operating procedures, and staff training; (iii) acquisition/development of visual guides that assist border inspectors in the identification of

suspected pests and diseases; (iv) production of SPS/ISPM (International Standards for Phytosanitary Measures) awareness materials (v) improved data management; and (vi) monitoring of pesticide residues at border points.

The risk-based import management system has been developed, and is operational. All import to Lao PDR of agricultural products should have a phytosanitary certificate (PC) and submit to post-entry quarantine (PEQ), including seeds and planting materials.²³

Supply chains of priority products

Supply chains of priority crop products (initially corn, followed by rice) for growing regional markets (especially China) has been strengthened by enhancing both public capacity to support better onfarm and post-harvest management practices. These measures should encourage Lao PDR's agriculture trade to become more formal, sustainable and valuable. The project has achieved that producers and exporters are well informed on SPS awareness and have a good understanding on MoU with the trading partners. During the project implementation, the export volume has increased especially to China, Vietnam and Thailand.

4.2.2. Animal Health

Improved Surveillance

The intended outcome of the project was that DOLF would focus on surveillance of transboundary animal diseases established in two provinces in the Lao PDR and Established risk-based surveillance and awareness of transboundary animal diseases in 4 provinces in Lao PDR by 2020.

Two surveillance of transboundary animal disease were established in Xiengkouang and Savannakhet Province. Four risk-based surveillance and awareness of transboundary animal diseases been established in Xiengkouang, Savannakhet, Borlikhamxay and Khammouan provinces; with the following activities:

1. sample collection within 9 districts of the 4 provinces has been planned to monitor the diseases

- Xiengkouang: Maximum of 2,453 samples from 56 villages of 3 Districts;
- Borlikhamxay: Maximum of 1,710 samples from 51 villages of 2 Districts;
- Khammouan: Maximum of 1,072 samples from 47 villages of 2 Districts;
- Savannakhet: Maximum of 2,789 samples from 70 villages of 2 Districts

²³ The World Bank's Logistics Performance Index indicators point out that **inspection activities** are responsible for approximately two-thirds of the delays that the global trading community encounters at the border, while customs authorities themselves are only responsible for one-third. This is one of the reasons why countries move away from a 100% inspection regime, and introduce risk based systems, or document-based control. In this context it is relevant to note what the WTO BALI Trade Facilitation Agreement of December 2013, in Article 10.5. states on (pre-shipment) inspection: "The new agreement bans the use of pre-shipment inspections where this procedure is used to determine tariff classification and customs valuation. Other types of pre-shipment inspection will, however, remain permitted although Member States are encouraged not to extend the practice."

- 2. Procurement has been made to purchase Nail and Cholera medicine to establish a control zone for foot-and-mouth disease and cholera in 9 villages of each target district (9 Districts) of 4 provinces.
- 3. Plan vaccination activities in 4 target provinces:
 - Target area in 9 villages of 9 districts in 4 provinces;
 - Disseminate the importance and impact of cross-border animal disease and highlight the importance of vaccination to the people in the four provinces, especially in the villages in the disease control areas.
 - Prediction of vaccination: 100% vaccination against foot-and-mouth disease (only for qualified animals), after about 2months of vaccination, a second dose is given for animal that have not been vaccinated before and the focus is on collecting vaccinated animals to check the effectiveness of the vaccine. Samples have been collected from 18 cows/buffaloes/goat and from 12 pigs. In case the village has less than that amount, the sample amount shall be collect all that available in the village.
- 4. Materials for surveillance and vaccination have been procured in 9 districts of 4 provinces.
- 5. Early detection and early warning system (DWRS) has been established in 18 provinces, including the 4 project target provinces.
- 6. Provincial and district animal disease response teams have been established in 9 districts of 4 target provinces.

Increased Capacity of the National Animal Health Center (NAHC)

Under the Project's activity of NAHC's ability to survey, tests and response for two priority diseases FMD, and CSF has been enhanced. Response to FMD and CSF outbreaks is used to targeted vaccination and movement control measures. For this, stronger links has been established with SEACFMD (Southeast Asia China Foot-and-Mouth Disease project), to obtain supply of FMD vaccine as required for outbreak response.

Specifically, improvement has been achieved on surveys, tests and response for the two priority diseased FMD, and CSF as follows:

- Necessary Equipment and chemicals has been provided for the diagnosis of both diseases;
- Conducted training for technical staff at the Center on both diseases by project experts;
- Conducted sample studies from the field of foot-and-mouth disease and Cholera to determine the rate of infection, isolation of antibodies caused by the vaccine, or the nature of the infection and the quality of the vaccine. The results of the research are very useful for the planning of vaccinations and the establishment of disease control zone for the Department of Livestock and fisheries in the future.
- Participated in field survey and conduct training for provincial and district staff of the project targets on how to properly collect, sort and deliver samples according to technical principles.
- Diagnostic outcomes can contribute to better planning for the control and eradication of both diseases in the future.

Baseline Survey

The project experts conducted a basic preliminary quantitative survey on the quality and use of veterinary drugs, focusing on interviews with stakeholders involved in the use of veterinary drugs, such as farmers, pharmacies, village veterinarians, provincial/district veterinarians. The results found on the basis of this survey are:

- Legislation to support the use of veterinary drugs is still aggregate in the law only. There is no legislation under the law to implement specific regulations, which are difficult to implement.
- Equipment, materials and chemicals to support the quality research of veterinary drugs and residues are still in short supply.
- Technical staff on veterinary medicine and residue quality research is not yet strengthen in the technical skills.
- The import and use of veterinary drugs, especially local antibiotics, is still widely used and is not regulated by the relevant authorities.

Based on these data, the project has implemented various activities to reduce these issues as follows:

- Work related to residues of veterinary medicine, primary animal products and animal feed.
- Contribute to the improvement of relevant legislation, in particular:
 - Law on Animal Husbandry and Veterinary (Revised) No. 8/NA, dated 11 November 2016
 - Decree on Animal Feed No. 2/MOH, dated 31 May 2020
 - Decree on Veterinary Medicine No. 199/ MOH, dated 13 March 2020
 - Decree on Slaughter and Meat Hygiene Inspection No. 516/MOH, dated 2 September 2020
 - Decision of the Minister of Antimicrobial Drugs for Animal and Aquatic Animal No. 0252/KP, dated 14 February 2020
 - Guidelines for inspection of residues in primary animal products and animal feed
 - Raw milk standard of Lao PDR 2020-00006, dated 1 August 2020
 - Cold storage standard for storing meat and animal products-KPL-2020-00007, dated 6 January 2021
- Strengthening laboratories for veterinary drug residues and hazardous chemicals in primary animal products and animal feed.
- Improved and upgrade the capacity of Central product safety research Center to analyze residues; such as: veterinary residues, vet metal, pesticides, etc.
- Improve and upgrade the capacity of the Central Animal Feed Research Center to analyze feed residues.
- Training of Central technical staff on residual analysis in primary animal products and animal feed.

- Establish inspection, surveillance and sampling networks for primary animal products and animal feed at the provincial and district levels throughout the country.
- Regularly inspect and collect samples of veterinary medicine, primary animal products and animal feed in each province.

Improved testing and monitoring of animal product safety

The project set out to support: (i) improved testing and monitoring of animal product safety,; (ii) technical training and development of procedures for food safety surveillance; (iii) improved and more regular surveillance visits to slaughterhouses, markets and fish processing facilities; (iv) better data collection and management; and (v) improved regional cooperation within the GMS and ASEAN frameworks. In the project's implementation the following improvements have been achieved on testing and monitoring, training, surveillance, data collection and regional cooperation between GMS and ASEAN:

- Department of Livestock and Fisheries has been actively involved in the SEACFMD project by sharing information on Foot-and-mouth disease through the international Organization for Animal Health (OIE) website and Facebook page https://www.facebook.com/ Seacfmd-Campaign. In addition, information is exchanged with neighboring countries on monthly and quarterly basis.
- Department of Livestock and Fisheries also regularly participated in the Annual Meeting of the SEACFMD program.
- Department of Livestock and Fisheries reports transboundary animal diseases to the international Organization for Migration (OIE) on a monthly basis through the website http://rr-asia.oie.int/activities/sub-regional-program/seacfmd/.
- Department of Livestock and Fisheries also continues to share information with ASEAN on the annual feed warning on animal feed.

Improved border situation of animal health handling

The project has resulted in an improved border situation with regard to animal health. This includes strengthening technical capacity within the NCLE to conduct risk assessment activities while establishing a set of procedures for border activities and the specification of a set of import conditions for high risk products. In particular the following has been achieved:

- A central Veterinary Epidemiology Unit (VEU) has been established and has networks (branches) at the provincial and district levels to coordinate, advise and monitor the monitoring and reporting of cross-border animal diseases;
- Strengthened veterinary checkpoints at international checkpoints throughout the country, especially in the six provinces where livestocks are imported and exported: Vientiane Capital, Xiengkouang, Xayabouri, Borikhamxay, Khammouan, Savannakhet and Champasak.
- Provision of training to veterinary checkpoint technician on domestic and international risk analysis, with the participation of technical staff from central and provincial, and these trainees to train the trainer at border checkpoints throughout the country;

- An established uniform form on import risk assessment to serve as a basis for nationwide implementation
- Development of inspection manuals for veterinary checkpoint staff to conduct inspections of each type of product with different risk or sources of risk;
- Provision of a contribution to the initiative to establish a wildlife and disease control zone in the north in collaboration with the Department of Livestock and Fisheries as a starting point for expansion of the whole country and the export of animals'/ animal products to the People's Republic of China;
- Establishment of a coordination mechanism with neighboring countries bordering Lao PDR to exchange information on animal disease outbreaks on a regular basis.

Strengthening Capacity

Strengthening capacity concerns with support for: (i) strengthening management capacity for longterm and sustained project implementation; and (ii) upgrading equipment for laboratories and enhancing quality management.

1. The management capacity has been strengthened by:

- More of specialized personnel in the analysis of animal diseases and residues in primary animal products and some animal feed that can continue to perform well.
- There are tools and equipment that are the basis for inspection and research that will be able to facilitate the basic operation of the water.
- There is a central epidemiological unit which will be the command center to control in case of outbreaks in the northern region in a timely manner by coordinating with the network epidemiological network at the provincial and district level that have been established.
- Veterinary checkpoints in the 6 target provinces of the project, have been improved and the technical staff of the checkpoints can manage the import and export as well as coordinate with the neighboring countries.
- Meat inspectors were trained in each of the four target districts of the four provinces, who will also continue to carry out regular water operations in each district to ensure consumer safety.
- Lesson learned from the establishment of disease-free zones can be applied to many other provinces, where the Department of Livestock and Fisheries is now focusing on the northern part of Laos, which will be the starting point for the export of livestock and Livestock products to China in accordance with the regulation of the WTO.
- However, the challenges to the sustainability of the activities are inevitable because the budget for the implementation such as, disease surveys, animal disease outbreaks, the establishment of disease control zones, as well as chemical for disease research and residues were relatively expensive; which in the past it was only supported by various projects. This will be the main reason why the activities will not be able to fully implement. The government of Lao PDR needs to establish a mechanism to seek funding from international organizations, the private sector, including the state budget, in order to ensure that activities are continuously sustained.

2. Upgrading laboratory equipment. The support on facilitating and upgrading the laboratories has been achieved by the following:

- The project provided tools, materials and chemicals necessary for the examination of crossborder animal diseases and residues to the Central center for Disease and Animal Feed Research;
- Training was conducted, in the first phase of the project, for technical staff to inspect basic animal products, veterinary residues and animal feed;
- Improved manuals, guidelines and implementation standards on cross-border animal disease screening;
- Trained technical staff to diagnose cross border animal diseases.

Quality Management

Quality management has been initiated on 1. cross-border animal disease control activities, 2. research activities on animal diseases, veterinary drugs and residues in primary animal products and animal feed, 3. border veterinary checkpoint activities, and 4. food safety.

1. Cross-border animal disease control activities:

- Procedures for storing and transporting vaccines in accordance with the standard.
- Procedures for immunization in accordance with technical principles.
- Procedures for collecting, processing and transporting samples to the Central Animal Disease Research Center to ensure that sample are free from defect and can be analyzed accurately and clearly.
- Samples were collected from vaccinated animals to check the quality of the vaccinated animals, whether the animal were immune or not. This will check the quality of the animal vaccine.

2. Research activities on animal diseases, veterinary drugs and residues in primary animal products and animal feed.

- Standard operation procedures (SOP) for the diagnostic procedures, residues and veterinary drugs have been introduced for each species to ensure the quality of research.
- Efforts have been made to upgrade the Animal Disease Research Center and Animal Feed Research Center to international standard (ISO) in the future.

3. Border veterinary checkpoint activities:

- Introduction of a standard implementation manual (SOP) for the inspection of animals and animal products imported and exported to ensure the quality and safety of products to consumers.
- Introduction of a standard implementation manual (SOP) for the risk analysis and assessment process for imported goods.
- 4. Food Safety Activities:
- Introduction of a standard implementation manual (SOP) for meat hygiene inspection procedures to serve as a reference for meat inspectors in the effective implementation at the district level.

4.2.3. Food Safety

Food safety surveillance program

The FDD focuses on risk-based, programmed annual food safety surveys and inspection capacity has been established in 6 provinces of Lao PDR introduced by 2020 with annual reporting showing a reduction in subsequent reported food outbreaks in those provinces and upgrade the national food laboratory.

The Food and Drug Department has developed a food safety surveillance program by collecting data from the provincial surveillance, organizing training sessions for inspector officers on food safety surveillance, food inspection on a risk basis. Lessons learned from emerging food safety cases and measures to be taken, implementation has been carried out in all provinces throughout the country, with good implementation being in the province where ADB Projects are completed, such as Luangprabang, Champassak, Savannakhet, Vientiane, and Oudomxay.

Expansion of the implementation of annual programs of food safety surveillance, monitoring, inspection, and hazard response

For food safety, the project has supported the expansion and implementation of annual programs of food safety surveillance, monitoring, inspection, and hazard response. Capacities were strengthened through scholarships and training of inspectors, with regard to both imported and domestic products. Support is provided for food testing and for selective upgrading of testing facilities.

Cooperation and exchange of information with neighboring countries has been supported through bilateral working groups, and through participation in the World Health Organization's International Food Safety Authorities Network (INFOSAN), and the ASEAN Rapid Alert System for Food and Feed (ARASFF). Further support has been provided to produce material for awareness-raising and education, and for improving capacity for rapid intervention in case of outbreaks.

The Food and Drug Department, Ministry of Health and Food and Drug Administration, have implemented an annual food inspection program with food and beverage samples, these are collected every quarter. With the aid of the operational budget, lessons have been learned by holding national meetings to discuss and identify hazards that need to be monitored, and by improving the response and surveillance program.

Important to note is that in many cases, hazard response has not been possible to implement in a timely manner due to the inability of the provinces to conduct their own analysis. Since there are no laboratories in the provinces and region, it remained needed to send the samples to the different research centers for analysis.

Improved food safety handling

Improved food safety handling, in the tourist industry and related parts of the food industry, has been pursued through promoting GHP and GMP on the basis of minimum requirements set in the enterprise grading system. Through Project-supported study visits, information and experiences on the development and application of scorecard-based systems were collected from China, Singapore and Thailand - where audit systems are routinely used for diagnosing food safety handling procedures. The Project has supported the drafting of suitable regulations for implementation of the grading system and regarding definition of qualification of providers.

The Food and Drug Department has developed a 15-point guide on good food preparation for hotels and restaurants to ensure food hygiene and safety, as well as conduct training for food processors twelve times a year in accordance with GHP & GMP principles. In addition, monitoring and supporting the actual implementation at the actual site 92 times a year, allowed by the available budget.

A tourism establishment grading system has been developed. Restaurants, food factories are categorized according to the checklist and rated with grading system with A (Excellent), B (Good) C (Moderately Good), all of which was inspected at the actual places. The inspections showed that the restaurant facilities have improved in hygiene, cooking is clean, the processors have an understanding and are aware to upgrade the cooking facilities to seek certification from the FDD of the Ministry of Health.

Possibilities for Lao PDR to use assessments by other GMS countries

For first-time market access, Lao PDR have issued requests to Thailand for market entry for processed food products, in the process allowing inspection of the production facilities by the authorities of Thailand before the first export, such as has been the case with the canned food factory in Bankeun, Friendship factory.

Application of Risk-based methods

The management of food safety inspection in Lao PDR is based on CODEX standards, manuals and guidelines²⁴ and ASEAN regulations, which are also based on CODEX. Currently, a list of risk control food products has been established and there are specific inspection rules in each group according to the risk level. For example, high-risk foods must be registered before importation and to be inspected 100% at checkpoints.

Food Safety Inspection at the checkpoints are carried out by the authorities that inspect food and medicine. Customs is responsible for collecting taxes and inspecting the release of goods, which is necessary for the right classification of goods and subsequently to raise the proper customs duties. Customs also physically inspect (expressly on expiration of goods) in the absence of the authorities at the checkpoints to determine the specific precautions for food safety, to ensure initial safety.

4.3. Output 2: Improved Regional Cooperation and Harmonization

4.3.1. Plant Health

Bilateral working groups

Bilateral working groups have been established on plant health, animal health and food safety established with memorandum of agreement signed for trade in key crops of Lao PDR. Pest report obligation are regularly exchanged through the website of IPPC and APPC.

²⁴ See Lao PDR's Law on Food, 2013, Article 13.

Institutional twinning arrangements

Under institutional Twinning, there has been close co-operation with Khon Kaen University in Thailand. Activities have been conducted for vocational training to involve university staff and students in applied research, surveillance, testing and diagnostics. The collaboration was extended to Kasetsart University for plant protection and Chiang Mai University for food safety science. Guest lecturers, including some from MAF, were brought in to teach on special topics related to plant protection, veterinary medicine and food safety. All CIUs are continuously coordinating with the NUOL. Guest lecturers are being mobilized to build the capacity for selected topics. CIUs are coordinating with OiE, IPPC, Food and Drug Department of adjoining countries, universities located in the regions for the institutional twinning.²⁵

Participation in regional fora

In addition to the participation in regional fora already covered under the other outputs (e.g., SEACFMD, INFOSAN, ARASFF) and specific twinning arrangements, regional cooperation and harmonization in SPS will be further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety. DOA regularly attend Asia meetings on SPS.

4.3.2. Animal Health

Participation in Regional SPS Initiatives

The project aimed in actively participating in regional SPS initiative such the Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and the ASEAN Rapid Alert System for Food and Feed by sharing data and annual reporting by 2017. For this the project resulted in the following actions:

- Information on animal health was exchanged with ASEAN Network.
- The Department of Livestock and Fisheries has been actively involved in the SEACFMD project by sharing information on foot-and-mouth disease through the International Organization for Migration (OIE) websites and Facebook page https://www.facebook.com/Seacfmd-Campaign). In addition, information is exchanged with neighboring countries on a monthly and quarterly basis.
- The Department of Livestock and Fisheries also regularly participated in the annual meeting of the Southeast Asia Regional Food-and-Mouth Disease Control Program (SEACFMD).
- For international Food Safety Network, the Department of Livestock and Fisheries has provided information on the safety of primary animal products to the Ministry of Health, which is the main focal point with the organization.
- The Department of Livestock and Fisheries regularly reports on cross-border animal diseases on a monthly basis to the international Organization for Animal Health (OIE).

²⁵ Design and Monitoring Framework, Updated as of 31 December 2020, of the Project: "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project - Additional Financing.

• The Department of Livestock and Fisheries regularly reports information on animal feed to the ASEAN Warning Agency.

Bilateral working groups

During the implementation of the project, meetings were held with neighboring countries (Thailand, Vietnam and China) among the relevant technical departments, which each country would take turns to host the meeting each year. Each meeting provided a memorandum of understanding between the two countries as a basis for practical implementation.

With China, the signing of joint agreement was completed to export cattle to China for the first time in Muangsing, Luangnamtha Province.

Institutional Twinning Programs

Under institutional Twinning, there has been close co-operation with Khon Kaen University, especially with veterinary science ever since inception of the Project. Co-operation was established on the improvement of the epidemiological work, technical staff at the Department and provincial level was sent for training. The collaboration was extended to Kasetsart University where guest lecturers, including some from MAF, were brought in to teach on special topics related to plant protection, veterinary medicine and food safety.

Information Sharing

Information on the safety of primary animal products is shared with the Ministry of Health, which is the main coordination body with the ASEAN Food Safety Network. Also, partnership has been made with Ministry of Health to draft the ASEAN Food Security strategy.

Participation in Regional Fora

In addition to participation in regional fora, regional cooperation and harmonization in SPS has further been deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam:

- Participated in and hosted bilateral meetings with the People's Republic of China, Thailand and Vietnam on facilitating cross-border trade in animals and livestock products.
- Bilateral meeting with Cambodia was not been able to implement, due to the quantity of crossborder trade in livestock and livestock products between the two countries is still seen as a drop.
- The Department of Livestock and Fisheries has actively participated in the Southeast Asia Footand-Mouth Disease Control Program, sharing information on the state of the foot-and-mouth disease on a monthly and quarterly basis.

4.3.3. Food Safety

Participation in regional initiatives

The Food and Drug Administration has been the National Coordinator of the International Food Code (CODEX), the international Food Safety Authority (INFOSAN), and the ASEAN Rapid Alert System for Food and Feed (ARASFF), which hosted the 7th Conference in Lao PDR. Information from both

systems is shared with domestic parties, especially in the case of notifications of goods exported from Lao PDR, such as substandard aphrodisiacs were found in peanuts, dried garlic shipped through Lao PDR, and substandard radiation was detected, while for those non-standard product are reported to all parties to be vigilant, especially at the border checkpoints. Lao PDR was not able to implement a notification system due to the lack of equipment and budget to analyze the food product at the check point.

Bilateral working groups

A Memorandum of understanding has been signed between Laos and Thailand on cooperation and exchange of lessons learned and capacity building on food safety, and a draft memorandum of understanding with China and Vietnam is being drafted, but does not focus on only trade in products.

Institutional Twinning Programs

Under institutional Twinning, there has been close co-operation with Khon Kaen University in Thailand. Activities have been conducted for vocational training to involve university staff and students in applied research, surveillance, testing and diagnostics. The collaboration was extended to Kasetsart University for plant protection and Chiang Mai University for food safety science. Guest lecturers, including some from MAF, were brought in to teach on special topics related to plant protection, veterinary medicine and food safety. CIUs are coordinating with OiE, IPPC, Food and Drug Department of adjoining countries, universities located in the regions for the institutional twinning.

Information sharing on food safety surveillance activities with the International Food Safety Authorities Network and ASEAN Rapid Alert System for Food has been undertaken annually.

Information sharing

With regard to the food safety regulatory requirements with ASEAN Food Safety Network in Lao PDR, by 2020, no information has been shared, since there was no new or updated regulation adopted in 2020.

Participation in regional fora

In addition to the participation in regional fora already covered under the other outputs (e.g., SEACFMD, INFOSAN, ARASFF) and specific twinning arrangements, regional cooperation and harmonization in SPS will be further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety.

The Food and Drug Administration of Public Health has cooperated with China, Thailand and Vietnam by meeting every two years to exchange and update on the management of food safety. On the 28-29 July 2021, the 5th meeting was held between Thailand and Laos (online); chaired by the Director General of the FDD and the Secretary of the Committee on Food and the Kingdom of Thailand. Reports of meetings have been made including an Action Plan. Other such meetings cycles will be continued to be held online with China and Vietnam.

4.4. Output 3: Enhanced Education Levels/University Training of SPS Specialists

Improvement of Education

The Faculty of Agriculture of the National University of Laos is leading the implementation of the improvement of Education. Activities include (i) curricula development, (ii) departmental laboratory and teaching equipment upgrade, and (iii) regional scholarship program. Implementation of these activities are progressing.

Degree Program completed

Thirty-four students (14 female) of academic session 2015-16 and 30 students (14 female) of academic session 2016-17 of Plant Protection have completed their degree program. Similarly, 29 students (18 female) of academic session 2015-16 and 33 students (14 female) of academic session 2016-17 of Rural Economy and Food Science have completed their degree program.

New Students

During the academic session 2020-21, a total of 120 new students (74 female) have been enrolled: (i) bachelor's degree in plant protection 40 students (19 female), (ii) bachelor's degree in veterinary Doctors of Veterinary Medicines 40 students (29 female), and (iii) bachelor of sciences in Rural Economy and Food Science 40 students (26 female).

Education of CIUs

Education has been conducted to all CIUs, provided by the Faculty of Agriculture of the National University of Laos. Each CIU consists of app. 60 government staff, located at the Ministries as well as in the provinces. The implementation arrangements of CIUs are described in detail in the Project Administration Manual.

4.4.1. Plant Health, Animal Health and Food Safety

Upgrade SPS academic education

The Project has upgraded SPS academic education by improving the quality of teaching at Faculty of Agriculture-National University of Laos (NUOL). This covered: (i) updating of curricula, (ii) improved teaching methodology; (iii) training opportunities including student internships with MAF and MOH for on-the-job training, and (iv) improved laboratory and teaching facilities. Support has been given to produce material for awareness-raising and education, and for improving capacity for rapid intervention in case of outbreaks.

Upgrade Curricula

Upgrade of the plant pest and disease, animal pest and disease, food safety curricula, with associated teaching materials produced by 2016 and collaboration between NUOL, MAF and MOH strengthened in surveillance, testing and diagnostics, teaching in Lao PDR, by 2020.

Improvement quality of teaching staff

Improving the quality of teaching staff focused on: (i) filling gaps in specialization presently available to the faculty; (ii) improving the command of English language (to better access competitive scholarships); and (iii) providing some advanced training (within Asia, but using English language curricula) in specialist short courses and at MSc and PhD levels.

Upgrading of teaching facilities

The upgrading of teaching facilities also included the construction of a purpose-built shared core teaching facility including a microbiology laboratory. A refurbishment of Department-specific laboratories has been implemented through respective subject specific equipment upgrades (including key texts and taxonomies), also further supporting more specialized teaching in the three Ministries.

5. Conclusions and Recommendations

Conclusions

Realism and sense of priority for SPS Handling management seems present in Lao PDR. Assessment of project implementation shows considerable differences, by province, by sector. The Plant Sector Food Safety, Animal sector and Education sector were satisfied with the project. However, these sectors need more support to upscale the SPS work for keeping in view the current circumstance to further increase the trade. This goes especially for the Plant Health sector. This is an important finding, since the Plant sector is overwhelmingly the most important sector in exports of AFF products from Lao PDR to the GMS region, and remains the main sector in imports of AFF products.

The highest impact the project achieved on strengthened surveillance and inspection programs, the lowest on improved regional cooperation and harmonization.

Overall, the project has been assessed relevant to SPS Handling, fitting in a national program, for achieving sustained outputs, and to cost-effectiveness and committed national resources. The project design was most clear and relevant on beneficiaries, outputs, linkages, and risk identification, least on available funds and project management. Project management did well on maintaining and operating the PMU, the need for improvement of English proficiency of staff was emphasized and requires improvement.

Project duration should be extended (score: less than satisfactory), while the Project size assessed merely adequate. The cost-effectiveness of the Project scored lowest of the project arrangements. Most improvement is needed on participation, performance and sustainability, while there is room for improvement on effective project selection, within the Project.

Recommendations

This impact Assessment has yielded a series of recommendations based on the comments of the respondents:

Recommendation 1. Continuation of the Project

Continuation of the implementation of project activities to create and complete a zone for foot-andmouth disease as planned. Continue to implement animal vaccination and sampling for animal immunity. Continue support for entrepreneurs in the field of food safety and technology. Continue the project to further support on food technology. Continue the support in encouraging Food safety program and procedure, especially drinking water plants. To secure project sustainability, high efficiency, the coordination and evaluation efforts should be increased and should be conducted on a regular basis, equipment should be provided in a timely manner, human resources in specific and technical field should be recruited.

Recommendation 2. Increased Capacity Building

For increased capacity building to be achieved, a series of specific actions may support: increased dissemination awareness and workshop training on SPS, provide more funding for training in the field of sanitation, and hotel hygiene in gastronomy/cooking, increased capacity building of specialized food technology personnel.

Training should be extended for staff at both central and local levels, specifically training to the provinces. More support should be provided on monitoring activities, more supplies and strengthen the skills of the concerned staff for sustainability of the project work.

Recommendation 3. Allocate Budget, more and more effectively

More budget and improved allocation of funds is needed, for the provinces for project implementation, in order to facilitate easy access to market for the business sectors, and creating, recruiting and relocating of specific, suitable technical staff. The lack of emergency budget in the event of an outbreak of smallpox or pest outbreaks, manifests in an insufficient allocating of funds to surveillance plans. Budget issues still cause delays in delivering supporting equipment. Aspects of the project funded in partnership with the private sector, through a Public-Private Partnership, should be expressly considered.

Recommendation 4. Improve Local Operation

To secure a timely and accurately budget allocation and support equipment supplies, collaboration with and on a provincial should be encouraged. A possible extended project duration should be extended to reach all localities. More support on specific training should be provided to the provinces. Local (provincial) budget allocation should be improved, for specialized technical responses, in particular technical training on plant protection, both of domestic and foreign origin.

Recommendation 5. Export Improvement

Export still faces difficulties since the Chinese conducted more comprehensive inspections, while there are more products in line, to export. Cross-border transportation is still facing difficulties and is time consuming due to inspections of transports and shipping documents, thus delaying shipment. There is need to coordinate with GMS partners for the validation of the testing facilities by these countries with special focus on China due to recent development by Lao China high speed railway. The internationally accepted approach of border control through risk-based systems should be adopted and put into practice. Timely delivery of supporting equipment to facilitate export should be secured.

References

2013 Bali Ministerial Conference, Trade Facilitation Agreement (TFA), which entered into force on 22 February 2017.

Commonwealth Standards Network, Regulatory Impact Assessment Manual, 5 April 2019.

Design and Monitoring Framework, Updated as of 31 December 2020, of the Project: "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project - Additional Financing.

Law on Food, 2013, Lao People's Democratic Republic Peace Independence Democracy Unit.

Logistics Performance Index, Annual Reports 2012-2018, World Bank.

Project Administration Manual, Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project, June 2012.

Project Administration Manual, Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project - Additional Financing, September 2017.

Project Performance Assessment Report of the Lao PDR Trade Development Facility", by IEG/World Bank Group, June 2018.

Project Sheet "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project – Additional Financing", 21 February 2021.

Report and Recommendation of the President to the Board of Directors: Proposed Grant for Additional Financing Lao People's Democratic Republic: Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project, ADB, September 2017.

Sanitary and Phytosanitary (SPS) Measures: Status Report on Agricultural Trade between Cambodia, the Lao PDR, Vietnam and China, Support for Economic Cooperation in Sub-Regional Initiatives in Asia (SCSI), GIZ, December 2017.

Strategy for Agricultural Development 2011-2020, Lao PDR Ministry of Agriculture and Forestry, September 2010.



Appendix I: Export of AFF products from Lao PDR to GMS countries

Export Lao PDR of AFF Products, 2013-2020, per Sector, in USD.

Export Lao PDR of AFF products to GMS Region countries, 2013-2020, per Country, in USD.



Appendix II: Import of AFF products to Lao PDR from GMS countries



Import Lao PDR, AFF products, 2013-2020, per Sector, in USD.

Import Lao PDR of AFF products from GMS Region countries, 2016-2020, per Country, in USD.



Appendix III: Annual Development of Export and Import of AFF products from/to Lao PDR

Sector	Average annual % change 2013-2020			
Plant	25			
Animal	435			
Food	32			
Total	31			

Export AFF Products from Lao PDR to GMS-countries, per Sector, 2013-2020.

Export AFF products from Lao PDR to GMS-countries, per Country, 2013-2020.

Country	Average annual % change 2013-2020
Thailand	20
China	72
Vietnam	20
Cambodia	325
Total	31

Import AFF products to Lao PDR from GMS-countries, per Country, 2013-2020.

Country	Average annual % change 2013-2020
Thailand	19
China	34
Vietnam	46
Cambodia	-3
Total	53

Import AFF Products to Lao PDR from GMS-countries, per Sector, 2013-2020.

Sector	Average annual % change 2013-2020
Plant	21
Animal	262
Food	92
Total	53

Appendix IV: Survey Questionnaire

Questionnaire: "Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project - Additional Financing"

Questionnaire through Survey

All actors, project managers (and/or other higher echelon officials): the four CIUs, Ministry of Agriculture and Forestry, Ministry of Health, Ministry of Education, FBOs, PAFOs, Line Ministries, Traders, Farmers.

Others, staff of the: GMS National Secretariat, Project Steering Committee, Project Technical Advisory Committee (PTAC), District Agriculture and Forestry Extension Office (DAFEO), Quarantine Offices, and Laboratories.

I BACKGROUND	NFORMATION					
Project Title:						
Project start date	::		Project completion date (planned/actual):			
Total Donor Budg	get (US\$):		Budget ADB Component (US\$):			
Type of	National	Asian	Other Agency/Ag	encies (sp	pecify)	
execution		Development				
		Bank (ADB)				
If ADB project was project formulated as a program		Yes No				
component?	component?					
Mission Dates in the country (s)		From:	From: To:			
Type of evaluatio	n		Mid-term Final			Ex-post
Project Composit	tion (Name/Title/I	Discipline)	Experience in Eva	aluation	Mission	Leader in
					Current	Mission
Donor Represent	ative		Yes		No	
Host Government Representative		Yes		No		
ADB Representative		Yes		No		
Other Participant	S		Yes		No	

Project Arrangements			
one box for each aspect of the mission			
arrangements			
Management & Coordination	poor	Satisfactory	Very
			comprehensive
Clarity of project terms or reference	poor	Satisfactory	Very
(mandate)			comprehensive
Clarity of mission terms or reference	unclear	Reasonably clear	Very clear
(mandate)			
Duration of project/mission in relation to	Too short	Adequate	Too long
terms of reference			

II PROJECT RELEVANCE (Appropriateness - At the time the project was initiated)	*Score
* Use a value scale of 1 to 5	(1-5)
1. Did the project lead to Improved Sanitary and Phytosanitary (SPS) Handling in	

Greater Mekong Subregion (GMS)? (1=not at all 2=hardly	
3=yes 4=yes to an important problem 5= yes to a very major problem)	
Improved Sanitary and Phytosanitary (SPS) Handling, for example through:	
- Easier compliance with SPS regulations	
- Increased export	
- Strengthened surveillance and inspection programs	
 Improved regional cooperation and harmonization 	
- Enhanced education levels on SPS	
2. How well did the project provide a cost effective response to Improved Sanitary and	
Phytosanitary (SPS) Handling in Greater Mekong Subregion (GMS)? (1=not at all	
2=barely appropriate 3=satisfactory 4=highly appropriate	
5=the most appropriate possible)	
3. Did the project form part of a coherent national program, and has its sustainability	
be ensured? (1=not at all 2=only	
slightly 3=linked in 4=well integrated 5=totally integrated)	
4. Were there reasonable expectations that adequate national resources could be	
committed to the project? (1=not at all 2=only slight 3=reasonable 4=very little	
doubt 5=absolutely certain). National resources, such as:	
- Assigning staff	
- Assigning budget	
- Providing equipment	
5. Is it realistic to expect project outputs to continue to be used once the project	
is completed, and adequate resources (see 4) would be committed for meaningful	
follow-up?	
(1=no or very little expectation 2= slight expectation 3=some expectations 4=very	
reasonable expectations 5=very strong expectations)	
6. OVERALL ASSESSMENT OF PROJECT RELEVANCE (Appropriateness)	
(1=very poor 2= rather unsatisfactory 3=satisfactory 4=good 5=excellent/highly	
relevant)	

 III. PROJECT DESIGN Assess the key elements of the project using the following (0-5) value scale: 0 = Not mentioned in the project document (PRODOC) 1 = Poor 2 = Weak/Less than Satisfactory 3 = Average/Satisfactory/Adequate 4 = Good/More than Satisfactory 5 = Excellent. 			*Score (0-5)
1. Immediate Objectives including specification of	Clarity of	Relevance	
targets	definition		
2. Specification of Beneficiaries:			
3. Specification of Outputs and Output Targets:			
4. Specification of inputs: - donor			
- national			
5. Validity of means, ends relationship between			
inputs, outputs and objectives:			
6. Implementation arrangements and managerial	Clarity of	Appropriate-	
structure	definition	ness	
7. Work-plan including timing of inputs, activities and	Clarity of	Realism	

outputs	definition		
8. Identification of prerequisites and risks for project	Clarity of	Realism	
success	definition		
9. Linkages with other related institutions and	Clarity of	Adequacy	
organizations	definition		
10. For achievement of Project objectives the realism		·	
of:			
- Project duration (time horizon)	Too Short	About right	Unnecessarily
			long
- Project size	Too small	About right	Unnecessarily
			large
OVERALL ASSESSMENT OF PROJECT DESIGN (Score 1-			
5)			
of: - Project duration (time horizon) - Project size OVERALL ASSESSMENT OF PROJECT DESIGN (Score 1- 5)	Too Short Too small	About right About right	Unnecessarily long Unnecessarily large

IV. PROJECT IMPLEMENTATION Assess project	Quantity	Quality	Timeliness	Overall
implementation on the following (1-5)	*(1-5)	*(1-5)	*(1-5)	Assessmen
value scale: 1 = very poor 2 = Less than Satisfactory				t
3 =Average/Satisfactory 4 = above average/good 5				*(1-5)
=Excellent.				
Donor Inputs:				
1. Budgetary disbursements				
2. Project personnel including consultants				
3. Equipment and construction				
4. Fellowships/study tours and other formal training				
5. Other (specify)				
National Inputs:				
6. Budgetary disbursements				
7. Personnel				
8. Equipment and physical infrastructure				
9. Other (specify)				
Internal Management:				
10. Project implementation reporting				
11. Work-planning and monitoring				
12. Coordination and relation with other				
organizations/departments				
13. Flexible management response to problems/and				
or changed circumstances				
14. Overall assessment of internal project				
management (score 1-5)				
External Support/Inputs to Management and				
Implementation:				
15. Technical support by ADB and or/other agencies				
(specify)				
16. Administrative support by ADB and/or other				
agencies (specify)				
17. Management support/Decision making by: -				
donor(s)				

18. Assessment of evaluation and review processes			
Overall assessment of input to project			
management/implementation by:			
ADB			
Other Supporting Agencies			
Government(s)			
Donors			
OVERALL ASSESSMENT OF PROJECT			
IMPLEMENTATION (Score 1-5)			
		1	

V. PROJECT OUTPUTS	Was this a minor or	Quantity	Quality	Level of
	major project output?	*(1-5)	*(1-5)	Implementation
	1 is minor			1-5 (where 1=poor,
	2 is major			5=to the full)
Output 1. Enhanced SPS				
management systems				
Market Assessment Agreements				
Effectiveness of animal disease				
outbreak response				
Effectiveness of Food Hazard				
Response (Good Hygiene Practices)				
More Reliable Trading partners in Lao				
PDR and Cambodia, Thailand, China,				
and Vietnam				
Output 2. Strengthened surveillance				
and inspection programs				
Annual surveys of pest and disease				
information for priority crops				
Surveillance of transboundary animal				
diseases				
Annual food safety surveys and				
inspection				
Output 3. Improved regional				
cooperation and harmonization				
Active participation in regional and				
international gremia				
Bilateral working groups				
Output 4. Enhanced education levels				
and university training of SPS				
specialists				
Teaching and laboratory facilities				
Plant pest and disease, animal pest				
and disease, food safety curricula				
upgraded, with associated teaching				
materials				
Post-graduate trainees completed				
courses (annual internships)				

Introduction new courses.		
Outcome Project Management (from		
PAM 2017)		
Project management unit to be		
managed by local staff, with advisory		
support from international expert, to		
continue administering improved SPS		
management mechanisms		
Technical advisory and National		
Steering Committee meetings		
Quarterly and Annual project review		
report, project monitoring and		
evaluation		
Awareness and stakeholder		
workshops (from 2018)		
At least 50% of female staff in PMU		
English proficiency training for key		
project staff		
Maintain and operate PMU in		
accordance with Financial		
Management Manual, Procurement		
Manual and Monitoring and		
Evaluation framework prepared by		
end-2012, ADB and Government		
rules/legislation.		
OVERALL ASSESSMENT OF OUTPUTS		
ACHIEVED (Score 1-5)		

VI. COST EFFECTIVENESS OF THE						
1 Given your knowledge of	Planned	Yes	No	Planned	Yes	No
similar projects was this project	outputs	105		Sustainable	105	110
the most cost effective (least	outputs			Effects		
				Lifects		
cost) way to achieve:						
2. Were there substantial cost	Yes			No		
over-runs (extension of budget)						
to complete the project ?						
3. Could the project have been	More		Just Righ	it as	Less	
more cost effective if there had			Impleme	ented		
been more or less of the						
following or was it well balanced						
as implemented? (tick one box						
for each):						
Use of National experts						
Use of International experts						
Reliance on existing Government						
capacities						

National training				
Use of Short-term Staff				
Use of NGOs				
Use of the Private Sector				
Concentration on key/central				
objectives/outputs (focus)				
Delegation of authority (if more				
or less specify by whom)				
Quantity of resources				
Other (specify)				
Tick any of the following which	Scheduling of inputs	Impleme	nting	Government
had a particularly negative	and activities	agency p	rocedures	procedures
effect on cost effectiveness		(specify a	agency)	
OVERALL ASSESSMENT OF THE	Quality (score 1-5)		Effectivenes	s (score 1-5)
COST EFFECTIVENESS OF THE				
PROJECT (Score 1-5)				

VII SUSTAINABLE EFFECTS AND	Sustainable Effects and Impact		
IMPACT (in relation to	(Expected at time of Evaluation - Use scale of 1-5 where 1 = none or		
project objectives)	negligible 2 = slight 3 = some 4 = co	onsiderable 5 = very substantial)	
	Effects	Impact	
Output 1. Enhanced SPS			
management systems			
Market Assessment Agreements			
Effectiveness of animal disease			
outbreak response			
Effectiveness of Food Hazard			
Response (Good Hygiene			
Practices)			
More Reliable Trading partners in			
Lao PDR and Cambodia, Thailand,			
China, and Vietnam			
Output 2. Strengthened			
surveillance and inspection			
programs			
Annual surveys of pest and			
disease information for priority			
crops			
Surveillance of transboundary			
animal diseases			
Annual food safety surveys and			
inspection			
Output 3. Improved regional			
cooperation and harmonization			
Active participation in regional			
and international gremia			
Bilateral working groups			

Output 4. Enhanced education	
levels and university training of	
SPS specialists	
Teaching and laboratory facilities	
Plant pest and disease, animal	
pest and disease, food safety	
curricula upgraded, with	
associated teaching materials	
Post-graduate trainees	
completed courses (annual	
internships)	
Outcome Project Management	
(from PAM 2017)	
Project management unit to be	
managed by local staff, with	
advisory support from	
international expert, to continue	
administering improved SPS	
management mechanisms	
Technical advisory and National	
Steering Committee meetings	
Quarterly and Annual project	
review report, project monitoring	
and evaluation	
Awareness and stakeholder	
workshops (from 2018)	
At least 50% of female staff in	
PMU	
English proficiency training for	
key project staff	
Maintain and operate PMU in	
accordance with Financial	
Management Manual,	
Procurement Manual and	
Monitoring and Evaluation	
framework prepared by end-	
2012, ADB and Government	
rules/legislation.	
OVERALL ASSESSMENT OF	
OUTPUTS ACHIEVED (Score 1-5)	

VIII PROJECT FEATURES WHERE THERE IS GREATEST NEED FOR IMPROVEMENT	
These questions are intended to help identify those aspects of projects where there is	х
most room for improvement. Indicate by marking a cross.	
1. What do you consider to have been the aspect of this project where	
there was greatest room for improvement if sustainable effects and	
impact were to be more cost effectively achieved? (tick one box only)	

- Project Selection (i.e. the concept and immediate objectives of the project)	
- Project Design	
- Project Implementation and Management	
- Project Supervision and Adjustment (revision)	
2. Which of the following factors are most likely to limit the sustainability of the project	
effects and impact? Tick a maximum of two as this question is intended to identify the	
areas which need most attention in future projects	
-Weaknesses in national institutions	
-Non-economic attractiveness/viability of the outputs developed by the project	
-Technical weaknesses in project outputs/recommendations	
-Lack of attention to natural resource sustainability	
-Lack of social/political realism in project outputs/recommendations	
-Insufficient involvement/participation by beneficiaries	
-Insufficient national financial resources to follow-up on the project	
-Insufficient national manpower resources to follow-up on the project	
-Lack of national priority/commitment to this type of development	
-Lack of national priority/commitment to this type of development	
OVERALL ASSESSMENT OF PROJECT FEATURES WHERE THERE IS GREATEST NEED FOR	
IMPROVEMENT (value 1-5)	

IX COMMENTS	
1.	
2.	
3.	

Appendix V: Interview Questionnaire Plant Health

Main Actor: PPC. The Plant Protection Centre (PPC) of the Department of Agriculture (DOA) is CIU for the implementation of the plant health program.

Output 2. "Strengthened surveillance and inspection programs" designed and implemented (for plant health, animal health, and food safety):

PPC: Under this component, necessary interventions will be targeted at raising the capacity
of the PPC to better carry out pest and disease surveillance activities, including: crop pest
surveillance; diagnostics and taxonomic identification; post-entry quarantine (PEQ) for seed
and other propagative plant materials; and, response to plant pest and disease outbreaks. In
order to build surveillance and monitoring capacity for plant pests and diseases, surveybased data gathering and management will be strengthened and diagnostic and analytical
services will be improved.

Q1: How have the interventions impacted the raising of the capacity of the PPC to better carry out pest and disease surveillance activities?

Before project, how many surveillance? Ow many pest?

How many surveillance increase now, pest list prepared?

2. Additional pest lists will be developed under additional financing, which would support further market access agreements with bilateral trading partners. More robust taxonomic identification of survey specimens will be promoted to expedite the diagnostics component of the survey. The provision of a greenhouse will initiate PEQ activities, and will serve the testing of seed and other planting materials. There will be improvements in data management from field surveys, so that a more comprehensive database can be generated as an essential resource for pest identification, trend analysis, risk management, and policy decision-making. Scholarships to regional universities, training attachments, English proficiency classes and participation in regional meetings will be supported.

Q2: How many additional pest lists have been developed under additional financing, which support further market access agreements with bilateral trading partners?

Q3: Has this resulted in further successful market access agreements with bilateral trading partners?

- 3. Fertilizer and pesticide analysis capacity will be upgraded. Participation in proficiency testing will encourage better quality of laboratory practice. Enhanced monitoring of pesticide residues on farm produce will be achieved through annual programs of sampling and testing with rapid test kits (with provision for selected samples to be sent for more quantitative analysis for problem pesticide groups identified from the rapid test monitoring process, as well as pesticides not adequately covered by rapid testing).
- Q4: How has the fertilizer and pesticide analysis capacity be upgraded?

Q5: How did this manifest in extra personnel, and extra analysis reports?

4. Under the forest health and SPS compliance of trade in forest products will conduct national situational analysis of the forest pest situation and phytosanitary requirements imposed by importing countries, establishing a program of passive surveillance and engaging in regional

consultation, that will provide a forum to identify common issues, weaknesses and opportunities for countries to work together to mainstream forest health into their national SPS compliance processes.

Q6: Have national situational analysis of the forest pest situation and phytosanitary required been conducted to satisfy importing countries?

Q7: Have regional consultation been conducted and if yes, how?

5. Project will introduce risk-based import management system that will require: (i) risk categorization; (ii) development of standard operating procedures, and staff training; (iii) acquisition/development of visual guides that assist border inspectors in the identification of suspected pests and diseases; (iv) production of SPS/ ISPM awareness materials (v) improved data management; and (vi) monitoring of pesticide residues at border points.

Q8: Have a risk-based import management system been developed, is it operational and what are the specifics?

6. Supply chains of priority crop products (initially corn, followed by rice) for growing regional markets (especially PRC) will be strengthened by enhancing both public capacity to support better on-farm and post-harvest management practices. These measures will encourage Lao PDR's agriculture trade to become more formal, sustainable and valuable.

Q9: Have supply chains of priority crops been strengthened by building public capacity, and is there evidence agriculture trade has become more formal, sustainable and valuable? If so, what is this evidence?

Output 3. "Improved regional cooperation and harmonization".

 Actively participate in Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed by sharing data and annual reporting by 2017

Q10: Has active participation in the Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed been realized by 2017, by sharing data and annual reporting?

If yes, what is the evidence? If no, why not?

2. Bilateral working groups on plant health, animal health and food safety established with memorandum of agreement signed for trade in key crops of Lao PDR, by 2020

Q11: Has bilateral working groups on plant health, animal health and food safety been established (on the basis of a signed memorandum of agreement) for trade in key crops of Lao PDR, by 2020?

3. Institutional twinning arrangements implemented by 2017

Q12: Has institutional twinning arrangements been implemented by 2017?

4. Undertake Information sharing on food safety regulatory requirements with ASEAN Food Safety Network in Lao PDR, by 2020

Q13: Has information sharing been undertaken on food safety regulatory requirements with the ASEAN Food Safety Network in Lao PDR, by 2020?

In addition to the participation in regional fora already covered under the other outputs (e.g., SEACFMD, INFOSAN, ARASFF) and specific twinning arrangements, regional cooperation and harmonization in SPS will be further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety.

Q14: In addition to participation in regional fora, has regional cooperation and harmonization in SPS further been deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam?

- Plant protection. If yes, what is the evidence? If no, why not?

Appendix VI: Interview Questionnaire Animal Health

Main Actor: DOLF/FDQCC. The Department of Livestock and Fisheries (DOLF) is the CIU of Animal health component.

Output 2. "Strengthened surveillance and inspection programs" designed and implemented (for plant health, animal health, and food safety):

1. DOLF will focus on surveillance of transboundary animal diseases established in two provinces in Lao PDR and Established risk-based surveillance and awareness of transboundary animal diseases in 4 provinces in Lao PDR by 2020.

Q1: Has surveillance of transboundary animal diseases been established in two provinces in Lao PDR? If yes, what provinces are these? If no, what are the reasons this has not been established?

Q2: Has risk-based surveillance and awareness of transboundary animal diseases been established in 4 provinces? If yes, how? In what 4 provinces? If not, why not?

 NAHC's ability will be enhanced to survey, test and respond for two priority diseases FMD, and CSF. Response for FMD and CSF outbreaks will utilize targeted vaccination and movement control measures, and stronger links will be established with SEACFMD (Southeast Asia China Foot-and-Mouth Disease project) to obtain supply of FMD vaccine as required for outbreak response.

Q3: Has NAHC's ability been enhanced to survey, test and respond for the two priority diseased FMD, and CSF? If yes, how? If no, why not?

3. Project will support to conduct a baseline survey on the quality and use of veterinary drugs in the country to identify the most common problems to be addressed in the future. Use will be made of capacities at FDQCC for testing several antibiotics. Furthermore, basic capacity will be established for surveillance of quality of antibiotics, and for testing of some veterinary drug residues using rapid test kits.

Q4: Has a baseline survey been conducted on the quality and use of veterinary drugs in the country? If yes, how? If no, why not?

4. Project will support: (i) improved testing and monitoring of animal product safety,; (ii) technical training and development of procedures for food safety surveillance; (iii) improved and more regular surveillance visits to slaughterhouses, markets and fish processing facilities; (iv) better data collection and management; and (v) improved regional cooperation within the GMS and ASEAN frameworks.

Q5: Have improvements been achieved on testing and monitoring, training, surveillance, data collection and regional cooperation between GMS and ASEAN, as painted above, and if so, how?

5. Improving the border situation vis-à-vis animal health will include strengthening technical capacity within the Epidemiology Unit to conduct risk assessment activities while establishing a set of procedures for border activities and the specification of a set of import conditions for high risk products.

Q6: Has the border situation vis-à-vis animal health been achieved through strengthening technical capacity within the Epidemiology Unit to conduct risk assessment activities? What procedures and specified conditions for high risk products have been developed?

6. Support will be given for: (i) strengthening management capacity for long-term and sustained Project implementation; and (ii) upgrading equipment for laboratories and enhancing quality management.

Q7: How has management capacity been strengthened for long-term and sustained project implementation with regard to Animal health?

Q8: Has the equipment for laboratories been upgraded?

Q9: Are procedures for enhancing quality management been implemented, and if so, which?

Output 3. "Improved regional cooperation and harmonization".

 Actively participate in Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed by sharing data and annual reporting by 2017

Q10: Has active participation in the Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed been realized by 2017, by sharing data and annual reporting?

If yes, what is the evidence? If no, why not?

6. Bilateral working groups on plant health, animal health and food safety established with memorandum of agreement signed for trade in key crops of Lao PDR, by 2020

Q11: Has bilateral working groups on plant health, animal health and food safety been established (on the basis of a signed memorandum of agreement) for trade in key crops of Lao PDR, by 2020?

7. Institutional twinning arrangements implemented by 2017

Q12: Has institutional twinning arrangements been implemented by 2017?

8. Undertake Information sharing on food safety regulatory requirements with ASEAN Food Safety Network in Lao PDR, by 2020

Q13: Has information sharing been undertaken on food safety regulatory requirements with the ASEAN Food Safety Network in Lao PDR, by 2020?

In addition to the participation in regional fora already covered under the other outputs (e.g., SEACFMD, INFOSAN, ARASFF) and specific twinning arrangements, regional cooperation and harmonization in SPS will be further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety.

Q14: In addition to participation in regional fora, has regional cooperation and harmonization in SPS further been deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam?

- Animal health. If yes, what is the evidence? If no, why not?

Appendix VII: Interview Questionnaire Food Safety

Main Actor: FDD. The Food and Drugs Department (FDD) of the Ministry of Health (MOH) comprises the CIU that is implementing the food safety program.

Output 2. "Strengthened surveillance and inspection programs" designed and implemented (for plant health, animal health, and food safety):

1. **FDD** will focus on risk-based, programmed annual food safety surveys and inspection capacity established in 6 provinces of Lao PDR introduced by 2020 with annual reporting showing a reduction in subsequent reported food outbreaks in those provinces and upgrade the national food laboratory.

Q1: Has the FDD established risk-based, programmed annual food safety surveys, and inspection capacity in 6 provinces of Lao PDR? If yes, how? In what provinces? If no, why not?

2. For food safety, project will support for the expansion and implementation of annual programs of food safety surveillance, monitoring, inspection, and hazard response. Capacities will be strengthened through scholarships and training of inspectors. The focus will be on both imported and domestic products. Support will be provided for food testing and for selective upgrading of testing facilities. Cooperation and exchange of information with neighboring countries will be supported through bilateral working groups, and through participation in: (i) World Health Organization's International Food Safety Authorities Network (INFOSAN); and (ii) the ASEAN Rapid Alert System for Food and Feed (ARASFF). Support will be given to produce material for awareness-raising and education, and for improving capacity for rapid intervention in case of outbreaks.

Q2: Have expansion and implementation of annual programs of food safety surveillance, monitoring, inspection, and hazard response been realized? If yes, how? If no, why not?

3. Improved food safety handling in the tourist industry and related parts of the food industry will be pursued through promoting GHP and GMP on the basis of enterprise grading. Through Project-supported study visits, information and experiences on the development and application of scorecard-based systems will be collected from PRC, Singapore and Thailand - where audit systems are routinely used for diagnosing food safety handling procedures. The Project will support the drafting of suitable regulations for implementation of the grading system and regarding definition of qualification of providers.

Q3: How has food safety handling in the tourist industry and related parts of the food industry been supported (through promoting GHP and GMP)?

Q4: Has a (tourism establishment) grading system been developed, and if so, what are the characteristics?

4. Project will commission a study on the possibilities for Lao PDR (in the framework of harmonization and cooperation among GMS countries) to use assessments by other GMS countries for first-time market access requests for processed food products. Similar country specific studies will be conducted in Cambodia and Vietnam (and possibly also in PRC and Thailand), followed by regional consultation aimed at adopting a cooperative system for sharing information about first time access assessments.
Q5: Has the study on possibilities for Lao PDR (in the framework of harmonization and cooperation among GMS countries) to use assessments by other GMS countries for first-time market access requests for processed food products been conducted?

5. Project support will be given for developing and implementing improved and risk-based methods of controlling imported processed food (in line with international, such as CODEX, and ASEAN recommendations). In line with the lead by the Department of Customs for the introduction of the ASEAN Single Window, tasks will be identified which in the future can be performed by Customs. This will include checking of expiry dates and compliance with import approvals.

Q6: Has improved risk-based methods of controlling imported processed food (in line with international, such as CODEX, and ASEAN recommendations) been developed and implemented?

Q7: What specific, concrete tasks for Customs on food safety are identified, and how are these substantiated (such as: checking on expiry dates, and compliance with import approvals)?

Output 3. "Improved regional cooperation and harmonization".

 Actively participate in Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed by sharing data and annual reporting by 2017

Q8: Has active participation in the Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed been realized by 2017, by sharing data and annual reporting?

If yes, what is the evidence? If no, why not?

10. Bilateral working groups on plant health, animal health and food safety established with memorandum of agreement signed for trade in key crops of Lao PDR, by 2020

Q9: Has bilateral working groups on plant health, animal health and food safety been established (on the basis of a signed memorandum of agreement) for trade in key crops of Lao PDR, by 2020?

- 11. Institutional twinning arrangements implemented by 2017.
- Q10: Has institutional twinning arrangements been implemented by 2017?
- 12. Undertake Information sharing on food safety regulatory requirements with ASEAN Food Safety Network in Lao PDR, by 2020

Q11: Has information sharing been undertaken on food safety regulatory requirements with the ASEAN Food Safety Network in Lao PDR, by 2020?

In addition to the participation in regional fora already covered under the other outputs (e.g., SEACFMD, INFOSAN, ARASFF) and specific twinning arrangements, regional cooperation and harmonization in SPS will be further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety.

Q12: In addition to participation in regional fora, has regional cooperation and harmonization in SPS further been deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam?

- Food safety. If yes, what is the evidence? If no, why not?

Appendix VIII: Interview Questionnaire Education

Main Actor: FA-NUOL. Faculty of Agriculture of the National University of Laos (FA-NUOL) is the CIU for Output 3 and implementing the Academic Education component of the Project.

Output 3. "Improved regional cooperation and harmonization".

 Actively participate in Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed by sharing data and annual reporting by 2017

Q1: Has active participation in the Southeast Asia China Foot-and-Mouth Disease project, International Food Safety Authorities Network and ASEAN Rapid Alert System for Food and Feed been realized by 2017, by sharing data and annual reporting?

If yes, what is the evidence? If no, why not?

2. Bilateral working groups on plant health, animal health and food safety established with memorandum of agreement signed for trade in key crops of Lao PDR, by 2020

Q2: Has bilateral working groups on plant health, animal health and food safety been established (on the basis of a signed memorandum of agreement) for trade in key crops of Lao PDR, by 2020?

3. Institutional twinning arrangements implemented by 2017

Q3: Has institutional twinning arrangements been implemented by 2017?

4. Undertake Information sharing on food safety regulatory requirements with ASEAN Food Safety Network in Lao PDR, by 2020

Q4: Has information sharing been undertaken on food safety regulatory requirements with the ASEAN Food Safety Network in Lao PDR, by 2020?

In addition to the participation in regional fora already covered under the other outputs (e.g., SEACFMD, INFOSAN, ARASFF) and specific twinning arrangements, regional cooperation and harmonization in SPS will be further deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam in the areas of plant protection, animal health and food safety.

Q5: In addition to participation in regional fora, has regional cooperation and harmonization in SPS further been deepened through information sharing within the various ASEAN SPS networks, as well as support for bilateral working groups with PRC, Thailand and Vietnam?

- Plant protection. If yes, what is the evidence? If no, why not?
- Animal health. If yes, what is the evidence? If no, why not?
- Food safety. If yes, what is the evidence? If no, why not?

Output 4. "Enhanced Education Levels/University Training of SPS Specialists".

1. upgrade teaching and laboratory facilities and one core faculty equipment;

Q6: Has teaching and laboratory facilities been upgraded, and (at least) one core faculty equipment been upgraded and/or implemented?

2. upgrade the plant pest and disease, animal pest and disease, food safety curricula, with associated teaching materials produced by 2016 and collaboration between NUOL, MAF and MOH strengthened in surveillance, testing and diagnostics, teaching in Lao PDR, by 2020

Q7: (specifically related to goal in 2020:) Has collaboration between NUOL, MAF and MOH been strengthened in surveillance, testing and diagnostics, and teaching?

- 3. post-graduate trainees completed courses (at least 50% female)
- Q8: How many post-graduate trainees completed courses have been achieved?
- Q9: How many of these courses were completed by female trainees?
- 4. mobilize 9 annual internships for students to be placed in MAF/MOH for on-the-job training in Lao PDR, by 2020

Q10: Has (a minimum of) 9 annual internships at MAF/MOH for students been realized for on-the-job training?

5. Project will upgrade SPS academic education by improving the quality of teaching at Faculty of Agriculture-National University of Laos (FA-NUOL). This will cover: (i) updating of curricula, (ii) improved teaching methodology; (iii) training opportunities including student internships with MAF and MOH for on-the-job training, and (iv) improved laboratory and teaching facilities.

Q11: How has the quality of teaching on SPS academic education at the Faculty of Agriculture-National University of Laos been improved? Has it covered the following specifics: updating of curricula (yes/no), improved teaching methodology (yes/no), training opportunities including student internships (yes/no), and improved laboratory and teaching facilities (yes/no).

Q12: If yes: can you give concrete evidence and/or examples?

6. The upgrading of the curriculum will be selective and will focus mainly on plant pests and diseases in GMS, animal diseases in Lao PDR and GMS, and food safety in GMS.

Q13: How has the curriculum been upgraded with a focus on plant pests and diseases, animal diseases, and food safety?

7. Improving the quality of teaching staff will focus on: (i) filling gaps in specialization presently available to the faculty; (ii) improving the command of English language (to better access competitive scholarships); and (iii) providing some advanced training (within Asia, but using English language curricula) in specialist short courses and at MSc and PhD levels.

Q14: Has quality of teaching staff been improved? If yes, how? If no, why not?

8. The upgrading of teaching facilities will also include the construction of a purpose-built shared core teaching facility including a microbiology laboratory. A refurbishment of Department-specific laboratories will be complemented by respective subject specific equipment upgrades (including key texts) to support more specialized teaching in the three departments.

Q15: Has a purpose-built shared core teaching facility been constructed, including a microbiology laboratory?

Q16: Has the Department-specific laboratories been refurbished, through respective subjectspecific equipment upgrades? Has this supported increased specialized training in the three departments of Ministry of Agriculture and Forestry, Ministry of Health, and Ministry of Education?

Appendix IX: Interview Questionnaire Project Management

Main Actor: Project Management Unit.

Q1: How has the PMU exercised the overall responsibility for managing the implementation of the Project and assisting the CIUs with the implementation of their respective components, including the supervision of consultant contracts?

Q2: How has the PMU exercised the primary responsibility for ensuring the integration of the Project's second output, "improved regional cooperation and harmonization", and its ultimate achievement?

Please, answer the above questions for each of the following subcomponents:

a) **PMU/CIUs Offices operation, organization.** Such as: organization of PMU and CIUs updated? For each CIU: which government counterpart?, how did the collaboration work?

b) Vehicle and Office Equipment management (PMU & CIUs). Such as: vehicles inspected and Office equipment procured?

c) **Trainings.** Such as: what trainings?, has a training calendar been prepared?

d) **Procurement.** Such as: recruitment of consultants (TOR-based budget has estimated the need of 34 consultants), motorbikes. How has the procurement been reported and monitored?

e) **Financial Management.** Such as: preparation of documents sets to be submitted to State Audit Organization (SAO) to conduct the annual audit of project accounts

f) **Planning, M&E, and Publicity.** Such as: preparation ad submission of AWPBs to ADB for approval, quarterly plans for the CIUs, preparation of updated M&E system covering impact, outcome and output.

g) **Consultant Implementation Support.** Such as: recruitment of in total 34 consultants (conform TORs), assignment of capacity (Levels of Effort), and contract management.

h) **Government Support Staff.** Such as: counterpart staff assigned (counterpart to the respective 4 CIUs), working to implement the project activities using funds from the project.

i) Enquiry Point Establishment (under the Economic Integration Division of DOPF of MAF). Such as: capacity building of SPS staff.

Appendix X: Survey Population

The Survey population consists of the estimated number of officials that are considered being an eligible questionnaire/interview respondent:

Stakeholder	Clarification	Number
CIUs	4 CIUs * 5	20
FBOs		364
Provincial Agriculture and Forestry Offices (PAFOs):		20
Food Safety	6 provinces * 5	30
Livestock	4 provinces * 5	20
Line Ministries	3 * 2 per ministry	6
Traders	17 * 3 per provinces	51
Farmers	still to be determined	to be determined
GMS National Secretariat	1	1
Project Steering Committee	5	5
Project Technical Advisory Committee (PTAC)	5	5
District Agriculture and Forestry Extension Office (DAFEO)	6 * 3-4	20
Quarantine Offices (3 types, food safety, love stock, plant health)	10 centers * 3	30
Laboratories (3 laboratories PPC, 2 FDD, 3 livestock and animal health)	8 * 1	8
Food Businesses, Food establishments:		
Restaurants		20
Food Processing Plants		20
Total Estimated Survey Population ²⁶		600

 $^{^{\}rm 26}$ Based on the input of the PMA SPS Team, and desk research.

Appendix XI: Sample Population

The sample size taken from the Survey population is 160 (27%), distributed as follows:

Stakeholder	Clarification	Number
CIUs	4 CIUs * 4	16
FBOs	5% of 364	18
Provincial Agriculture and		
Forestry Offices (PAFOs):		
Food Safety	6 provinces * 2	12
Livestock	4 provinces * 2	8
Line Ministries	3 * 2 per ministry	6
Traders	17 * 1- 2 per provinces	30
Farmers	still to be determined	15
GMS National Secretariat	1	1
Project Steering Committee	5	5
Project Technical Advisory Committee (PTAC)	5	5
District Agriculture and Forestry Extension Office (DAFEO)	6 * 1	6
Quarantine Offices (3 types, food safety, love stock, plant health)	10 centers * 1	10
Laboratories (3 laboratories PPC, 2 FDD, 3 livestock and animal health)	8 * 1	8
Food Businesses, Food establishments:		
Restaurants		10
Food Processing Plants		10
Total Estimated Survey Population ²⁷		160

 $^{^{\}rm 27}$ Also based on the Survey Results and input of the PMA SPS Team.