

STDF PROJECT GRANT (PG)

APPLICATION FORM

Project Title	Improving pig biosecurity and African Swine Fever (ASF) control in 4 ASEAN countries: Vietnam, Laos, Cambodia, Philippines
Objective	Controlling African swine fever to secure regional trade in pork products from these 4 countries
Budget requested from STDF	\$ 900 179
Total project budget	\$ 1 009 379
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I. BACKGROUND & RATIONALE

1. Relevance for the STDF

The proposed project aims to improve pig biosecurity and control of African Swine Fever (ASF) in Vietnam, Laos, Cambodia and the Philippines. This will primarily be done through the training of official veterinarians (trainings of trainers' model), mostly face-to-face with some online, as well as through the development and deployment of an educational training platform (digital application) for large pig operators and small farmers, and a face-to-face training of central laboratories staffs.

The project relates to the following activities cumulatively:

- (i) *the identification, development and dissemination of good practice in SPS-related technical cooperation, including the development and application of innovative and replicable approaches;*

Since there is no vaccine against ASF, which is an animal disease that hinders trade in Asia, improving overall biosecurity measures remains the main barrier against the spread of the virus, as pointed out by the Permanent Expert Group on ASF for Asia (GF-TADs) in November 2019, with needs for awareness-raising, training, technical support for producers, quality control and traceability, etc. To the Standing Group of Experts on African Swine Fever (SGE-ASF) for Asia (meeting on the 10 April 2019 in Beijing, China Conclusions), there are additional unique challenges for dealing with the disease in Asia where there is a high density of pigs, complex value chains and many other high impact endemic swine diseases. There is a need for experts with an understanding of ASF virus and knowledge of the swine industry and swine disease situation in Asia to work together with infected and at-risk countries to share information and develop strategies that will lead to greater understanding of how to control and minimise the impact of ASF in Asia and contribute at a global level for better understanding of the disease. This project therefore aims to contribute to the dissemination of biosecurity as a good practice in SPS-related technical cooperation.

The project could be replicable in other ASEAN countries, as swine fever is endemic in Southeast Asia, although not all countries report it, and it is a transboundary disease that can only be addressed with the cooperation of all countries in the same region, within which trade is carried out.

- (ii) *STDF work on cross-cutting topics of common interest;*

It has now been demonstrated, particularly with the COVID-19 crisis, that animal health, environmental health and human health are intrinsically interconnected ("One Health" concept). As such, prevention and control of transboundary animal diseases are part of global health. African swine fever (ASF) is an extremely resistant viral disease affecting pigs and wild boars, with a mortality rate of between 90% and 100% of infected pig populations. The health and economic impact of ASF goes beyond the countries affected, destabilising the global price of pork and pork products. ASF can thus be considered as a cross-cutting topic of common interest (see below, item 8).

- (iii) *the use of regional approaches to address SPS constraints;*

ASF has become established on a long-term basis throughout Asia, mainly due to transboundary trade in pork products. Although epidemiological outbreaks are still localised to a greater or lesser extent in certain countries (Cambodia, Myanmar, the Philippines, Indonesia, China), the virus seems to be established on a long-term basis in the region, as is the case in Laos and Vietnam, where no district has been spared. That is why, according to the Standing Group of Experts on African Swine Fever (SGE-ASF) for Asia, tackling ASF requires "a regional approach for Asia and needs to be adaptable considering heterogeneity of pig production systems in Asia".

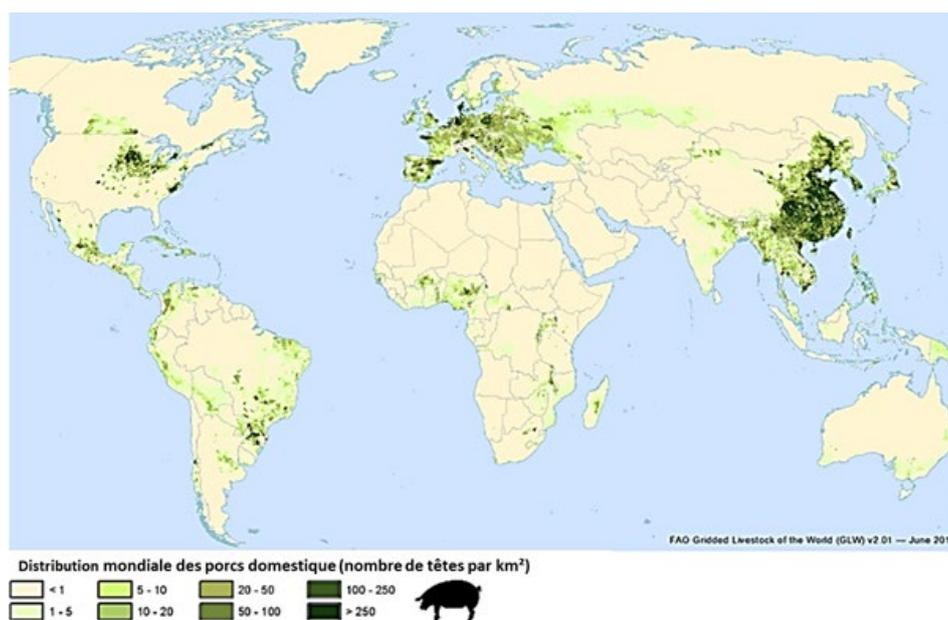
- (iv) *collaborative and inter-disciplinary approaches focused on the interface / linkages between human, animal and plant health and trade, and benefiting from the involvement of two or more STDF partners or other relevant organizations.*

Because ASF is a highly viral animal disease, it compromises the trade in pigs and pig products. This project proposes to secure this trade by strengthening the implementation of SPS measures (control) and by implementing biosecurity as a good practice to avoid the development of the disease (prevention). These two vectors can only be effective if veterinary authorities and pig farmers and operators are therefore aware and trained. The public-private partnership (PPPs) is the best way to ensure the implementation of such an approach. Indeed, to the OIE guidelines, "PPPs can provide animal health services, policy development and trade development on a scale, quality and geographical penetration that the public sector could not achieve alone. The efficiency of veterinary services can thus be improved worldwide through greater use of such partnerships". This is why the proposed project is being carried out by two distinct organisations: ENSV-FVI (a public organisation and a higher education establishment which has been a Collaborating Centre of the OIE for the training of official veterinarians since 2004) and IFIP (a French technical agricultural institute, with private status, whose mission is to support the professional organisations of the pig industry). Their joint action will address two distinct but complementary target audiences to prevent and control African swine fever: the veterinary authorities (official veterinarians as well as the staff of central animal analysis laboratories) and the pig farmers and operators.

Lastly, it is worth noting that on 9 September 2020, the foreign ministers of the member states of ASEAN approved France's application to become a development partner of the organisation. This new status marks the strengthening of France's ties with ASEAN, with which it shares a common vision of the Indo-Pacific region based on international cooperation in particular. France relies on a large regional economic, cultural and scientific cooperation network (140 French operators, centres and research institutes) as well as the mobilisation of the French Development Agency (AFD), which has been present in the region for 25 years and has funded more than 170 projects there since 2010, representing a commitment of more than 4 billion euros. Therefore, the possible scaling up of this proposed project could potentially be of further interest to French development agencies in order to meet the expectations of France's new status with ASEAN.

2. SPS context and specific issue/problem to be addressed

- (i) *food and agricultural flows and relevant SPS issues:*



South-East Asia and China, followed by Europe and North America are the main areas of pig farming in the world. (Source: FAO, gridded livestock of the world)

a) ASF has decreased pig production capacity in Southeast Asia

Pigs play an important role as a source of income for rural and peri-urban populations in Southeast Asia, and in most countries pork is the favorite meat of the population. In Southeast Asia, pigs are raised in a variety of environments, ranging from small family-run units of stray and backyard pigs, to large intensive farms, to small and medium-scale semi-commercial farms. To date, small backyard pig operations, with no or limited biosecurity measures, represent the majority practice and the most vulnerable to disease. In peri-urban areas, pig farming is becoming more intensive and these farms are generally well equipped and managed, with a high level of biosecurity and productivity (source OIE).¹

Vietnam:

Death and culling together, ASF caused the loss of about 6 million pigs in 2019, and about 90 thousand in 2020 according to General Statistics Office of Vietnam. For the first six months of 2021, more than 60 thousand pigs were lost according to media (FAO).

According to Vietnam's Ministry of Agriculture and Rural Development (MARD), the total pig herd at the end of 2020, was 27.3 million head, equivalent to about 88.7 percent of the pre-ASF level (January 2019); live-weight pork production reached about 3.5 million metric tons (MMT), up 3.9 percent over 2019. During 2020, the ASF epidemic caused a decline in pork production and an unprecedented pork price crisis, leading to a surge in imported live hogs and pork and pork products.² According to the United States Department of Agriculture (USDA), the decline in pork production due to ASF would total 20% in 2020 in Vietnam.

Laos:

The pig population was 4,114 thousand head in 2019 (Laotian agriculture statistics). Pork imports increased almost 7-fold in dollar value between 2019 and 2020 (data from the Customs Department-Ministry of Finance and Development and Exports from the Ministry of Industry and Customs) and increased from 29.66 tons in 2019 to 42.32 tons in 2020.

Since the Ministry of Agriculture and Forestry confirmed the first ASF outbreak in Salavan Province on 20 June 2019, ASF outbreaks were reported in all 18 provinces between May and November 2019. The second round started from June 2020, ASF was detected in 15 districts in 7 provinces.

Cambodia:

Between 2015 and 2019, the volume of pig production (in heads) fell from 2,357,839 to 1,030,494 (-46.7% between 2018 and 2019) among small-scale farmers, and rose from 416,525 to 1,155,431 among large-scale farmers (+42.1% between 2018 and 2019). On total farms, there is a 20% decrease in production between 2018 and 2019. The percentage of commercial hog farms increased from 30% in 2018 to 53% in 2019, while that of small farmers decreased from 70% in 2018 to 47% in 2019. This represents a sharp and rapid decline in traditional livestock production, on which ASF has had a strong impact.

Since the Ministry of Agriculture, Forestry and Fisheries (MAFF) confirmed the first ASF outbreak in Ratanakiri Province in April 2019, ASF outbreaks were detected in five provinces. Recently, media reported that ASF was detected in illegally transported pigs intercepted at two border checkpoints in Banteay Meanchey Province (that borders Thailand) and in Takeo Province (that borders Vietnam). Fifty live imported pigs were found to be infected with ASF according to the media.

Philippines:

In the Philippines the pork sector is the second largest agricultural contributor to GDP and the most productive livestock sector by production volume and value. As of January 1st 2019, the national big herd numbered 12.7 million with 64 percent of these pigs residing in backyard farms (Philippine Statistics Authority, 2019). Since the Department of Agriculture (DA) confirmed the first outbreak started on July 2019, ASF caused the loss of over 3 million pigs. According to the United States Department of Agriculture (USDA), the Philippines experienced a 16% decline in pork production due to ASF in 2020.

A rebound in agricultural growth is expected once the livestock sector has fully recovered. For the first quarter of 2021, the agricultural subsectors recorded the following growth: rice (8.6%), corn

¹ https://rr-asia.oie.int/wp-content/uploads/2020/01/pig_value_chain_in_se_asia_1st_sge.pdf

² USDA Report, May 2021

(6.4%), coffee (12.3%), cocoa (11.4%), pineapple (5.3%), mango (4.1%), and **livestock (-23.2%)**.

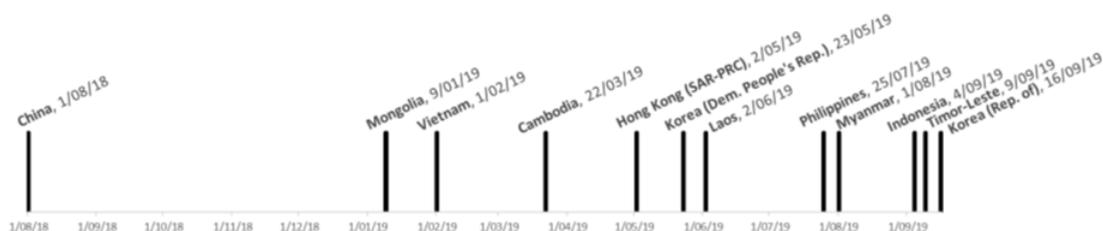
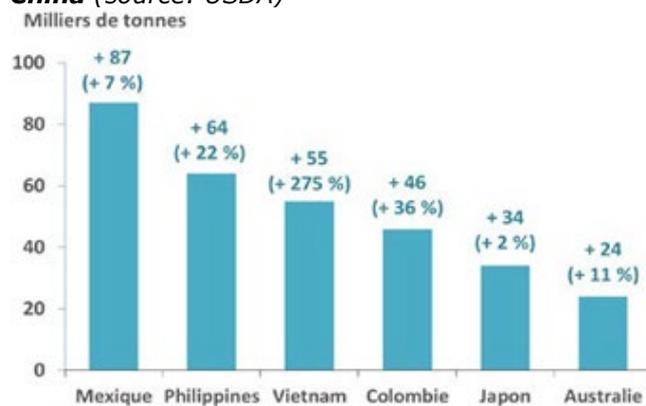


Figure 1 Temporal emergence of African Swine Fever in Asia based on OIE reporting data (OIE, 2019b, in *Developing a Regional African Swine Fever Socioeconomic and Livelihood Impact Assessment Framework*, Australian Centre for International Agricultural Research, June 2021)

b) Regional trade in pork and pork products is hindered by ASF

The prevalence of ASF in the region leads to increased pork imports in the countries infected by ASF. USDA forecasts indicate that Vietnam and the Philippines are expected to increase the volume of their pork imports, albeit more modestly than China, due to growing demand in these countries. Under the national state of emergency that may soon be declared in the Philippines, the possibility of importing up to 350,000 tons of pork in 2021 would be opened.

Projected growth of pork imports from 2018 to 2020 in selected countries other than China (source: USDA)



According to figures from the Cambodian Customs Department, live pork imports increased eightfold between 2019 and the first 9 months of 2020 (in USD dollars). In 2019, live pigs came from Thailand (86%) and Vietnam (14%), while in 2020, imports came only from Thailand, which has not reported any outbreaks of ASF to the OIE. In fact, Thailand, one of the few Asian countries that has not reported an outbreak of ASF, saw its live pig exports increase by 339% in value in 2020 (61% to Cambodia and 26% to Vietnam) and its pork exports (fresh, frozen, or processed) increase by 69% (to Hong Kong and Japan).

The prevalence of African swine fever in the region is affecting trade, while demand for pork is high and not being adequately met (e.g; Cambodia, only 82% of the domestic demand of pork product is met). The regional Asian market for Vietnamese exports of pork and pork-based products represents 46%, far ahead of Europe, America or Oceania in 2020, which could be favourable if the ASF was under control. Figures from the Cambodian Ministry of Agriculture indicate that exports of sows and wild boars have been divided by ten between 2015 and 2019 (in number of heads of hogs). The high domestic consumption of meat in China, which has lost almost half of its pork production, could represent an opportunity for these countries to develop exports to China.

c) The application of SPS measures must be strengthened to better control ASF

The zoning policy in the pork trade should be encouraged to avoid possible embargoes that would have serious consequence, as well as to control the disease, strengthen prevention and preparedness of countries and minimise dangerous effects on animal health, welfare and international trade. Thailand continues its embargo on imports of live pigs and their carcasses from China, the Philippines, Vietnam and from any other country having notified outbreaks of ASF (Bulgaria, Poland, etc.). At the same time, Cambodia's Ministry of Agriculture has announced strict controls on pigs imported from Thailand following the detection of ASF in February 2021. The authorities have authorized the import of pork from Brazil to meet local demand. Cambodia, which consumes about 8,000 pigs per day, was importing 1,800 to 2,000 live pigs daily from Thailand in 2020. Authorities are also working to prevent the illegal import of live pigs from Thailand.

Import controls need to be strengthened to better control the spread of the disease in a context of increasing imports of pork products: 1000 pigs contaminated with African Swine Fever exported from Thailand to Vietnam were destroyed in May 2021. During quarantine at a farm in this province, health tests on this herd were positive for ASF. The veterinary department of Zone 3 ordered the euthanasia of the animals and fined Senat, the exporting company.

(ii) the institutional framework for SPS management:

ASEAN (Association of Southeast Asian Nations), created in 1967, includes 10 countries: Indonesia, Malaysia, Singapore, Thailand, the Philippines, Brunei, Vietnam, Laos, Burma and Cambodia. The ASEAN signed the ASEAN Free Trade Area (AFTA) in 1992 consisting in a trade bloc agreement supporting local trade and manufacturing in all ASEAN countries, and facilitating economic integration with regional and international allies. Vietnam and Laos joined the agreement originally signed by 6 countries (including the Philippines) in 1995; Cambodia in 1999. The primary goals of AFTA seek to increase ASEAN's competitive edge as a production base in the world market through the elimination, within ASEAN, of tariffs and non-tariff barriers and attract more foreign direct investment to ASEAN.

With more than 650 million inhabitants, i.e. nearly 9% of the world's population, the area has a constant need for food products, particularly animal products. In order to modernise their production tools and develop their activities, local companies have expressed needs in terms of animal feed, hygiene products, veterinary products, medical devices for animals, equipment and automation materials for their infrastructures.

The area is responsible for 8% of world trade. This integration into world trade has resulted in particular from the integration of ASEAN, which has led to the elimination of almost all (except for "sensitive" products, at a maximum of 5%) tariff lines on trade in goods between member states. The agricultural sector, the natural wealth of the continent, continues to play an important role in the least developed countries: it represents 22% of GDP in Cambodia and 16% in Laos. It is noteworthy that agricultural raw products and commodities of agricultural origin account for an average of 17% of the total exports of the ASEAN countries and up to 34% of total exports in Myanmar, followed by Indonesia (29%) and Laos (25%), although they play a limited role in the economy (6% of GDP on average and up to 16% of GDP in Vietnam, the region's major agricultural power).

ASEAN seeks to boost intra-regional trade. "Enhancing regional trade is critical to build our resilience against current global uncertainties," said Vice Minister for Trade and Industry of Viet Nam, H.E. Tran Quoc Khanh in his opening remarks, on January 10th, 2020, during a high-level ASEAN symposium. He further said that ASEAN should stay committed to deepen the market integration. "To achieve a higher intra-regional trade by 2025 and beyond, ASEAN should redouble efforts to reduce trade costs, identify new sectors and products with high trade potentials, and continue to support an open, inclusive and rules-based trading system", said Deputy Secretary General of ASEAN for the ASEAN Economic Community, Dr Aladdin D. Rillo, who attended the Symposium as one of key speakers.

ASEAN is currently working towards the establishment of an Economic Community by 2025, based on "a single market and an integrated production base". It is already 90% operational. The region also continues to engage in multilateral, regional and bilateral free trade agreements, as evidenced by the EU-Vietnam (signed) agreement as well as the entry into force of the Trans-Pacific Partnership (CPTPP) in Singapore and Vietnam.

Cambodia, Vietnam and Laos also are part of GMS (Greater Mekong Subregion), an economic cooperation program supporting the implementation of high-priority projects in the six nations that share the Mekong river (Intra-GMS Trade: \$444 billion in 2015), in which agriculture is the backbone. With over 60% of the subregion's 340 million inhabitants engaged in small-scale agriculture, it directly supports the livelihoods of nearly 200 million people. To GMS, increased recognition of the benefits of regional cooperation is manifested in the evolution of regionalism both in Asia and more broadly. But, the GMS Health Cooperation Strategy 2019-2023 points also out that at the fore of regional health challenges is the threat of cross-border disease spread, the GMS being a global hotspot for the transmission of emerging, reemerging, and epidemic prone diseases, particularly zoonoses.

All 4 beneficiaries of this project are members of the WTO (Philippines, 1995; Cambodia, 2004; Vietnam, 2007; Laos, 2013) and are therefore encouraged to apply the corollary sanitary standards: those of the OIE for animal health and those of Codex for food products.

(iii) The project is in line with the SPS priorities or issues identified in SPS-related capacity evaluations and the Enhanced Integrated Framework's (EIF) Diagnostic Trade Integration Study (DTIS) for least developed countries:

Considered one of the major animal diseases of our time on a global scale, the current ASF crisis has resulted in millions of animal losses in recent years and has taken away the livelihoods of families who depend on pig farming. While the disease poses no direct risk to human health, it is a barrier to the livestock sector reaching its full potential, creating jobs and reducing poverty (SDG 2). The ASF outbreaks in Asia might render the virus deleterious to the global pig industry associated with globalization. Travelers and international trading are the main carriers of a human-driven disease such as the ASF virus.³

It was not until August 2018 that ASF has caused a major impact on pig production in China, and later in other neighbouring countries, causing the worst economic crisis for the swine industry and the food security in the region (Yun, 2020). Agricultural productivity growth, however, is necessary for both domestic use and exportation. Several factors affect the success of livestock production systems, including sustainable resource management, evolving agricultural technology, financial management and animal disease control (Thornton, 2010). Animal-based foods are considered complete and high-quality sources of major dietary proteins. As the demand of animal products increases, pork will continue as one of the main protein sources in Asia, and pig production will continue to be one the major farm animals in the livestock subsector.

In June 2019, the UN's Food and Agriculture Organization (FAO) warned that the virus was threatening the livelihood and food security of millions of people in Southeast and East Asia, particularly small-scale pig farmers.⁴

In this context, ASF represents a significant threat to the market for pork and pork products in each Asian country and in the region, as a transboundary disease can:

- increase poverty levels particularly in poor communities that have a high incidence dependence on livestock farming for sustenance;
- cause major production losses for livestock products, thereby reducing farm incomes. They may also restrict opportunities for upgrading the production potential of local livestock industries by making it difficult to utilise exotic high producing breeds which tend to be very susceptible to the transboundary disease;
- add significantly to the cost of livestock production through the necessity to apply costly disease control measures;
- seriously disrupt or inhibit trade in livestock and livestock products either within a country or internationally. Its occurrence may thereby cause major losses in national export income in significant livestock-producing countries.⁵

³ *The future of pig industry after the introduction of ASF*, Yonlayong Woonwong, Duy Do Tien and Roongroje Thanawongnuwech (october 2020).

⁴ *The Diplomat, The battle to curb ASF in Asia*, 18 July 2019

⁵ EMPRESTADS, FAO

The project therefore aims, in accordance with the recommendations of the FAO and the OIE, to strengthen the control and prevention of the disease in order to better contain the spread of the virus, and thus preserve the food security of the populations of these 4 countries.

It also meets the objectives set by Laos and Cambodia in the framework of Enhanced Integrated Framework's (EIF) Diagnostic Trade Integration Study (DTIS):

-Lao businesses are to be able to supply quality products and services and compete in the global marketplace. The economic and social benefits of increased SPS capacities are: better protection of consumers against food-borne hazards and, consequently, reduced morbidity, mortality, loss of productive life and treatment cost; better protection of livestock against transboundary animal diseases and, consequently, reduced losses of income and production; increased SPS capacities, allowing the country to better participate in regional for and consequently contribute to political goals of economic cooperation and integration (*Lao PDR DTIS update: trade and private sector development roadmap (2012)*)⁶.

To increase competitiveness, the Cambodian Trade Integration study (2019-2023)⁷ points out its need to exploit the possibilities for adding additional value in Cambodia. In the case of agriculture, this entails undertaking processing of farm-gate output – as is already underway in the case of rice. Cambodia strives to promote agricultural commercialization through further strengthening of the sanitary and phytosanitary measures, trade facilitation, additional investment in quality laboratory for exportation as well as promoting production and consumption of domestic agricultural products ("Master plan for Agriculture sector development towards 2030" and "Agriculture sector strategic development plan 2013-2023").

(iv) *Key SPS issues to be addressed by the project:*

Combating communicable disease threats such as ASF requires strong capacity for surveillance, risk assessment, laboratory diagnostics, risk communications, and response across both the public health and animal health sectors. In view of the economic context presented above, the **key SPS issues** to be addressed by the project will be the following, in order to secure trade in pork and pork products in the context of ASF in Southeast Asia:

a) For the official veterinarians and laboratory staffs (through mostly face-to-face trainings): implementation of OIE standards relating to ASF (risk analysis capacity, veterinary inspections, certification, monitoring and zoning) for trade of living animals and implementation of *Codex alimentarius* standards relating to products of animal origin. SPS measures are meant to protect animal health and products of animal origin, which is the role of official veterinarians throughout monitoring and certification (OIE references: OIE Terrestrial Code, Chap. 3.1, 4.1, 4.2, 4.4, 4.5, 5.1, 5.2, 5.3, 5.5, 5.6, 5.10 and 15.1).

In corollary, strengthening the capacity of central animal health laboratory staff in these 4 countries is also an essential milestone in ensuring cross-border animal disease control through reliable diagnostics: conformity assessment, surveillance, laboratory analysis... The results of the laboratory analysis help to better interpret the ASF epidemiological data, which is an indispensable tool to help determine the measures to be applied.

b) For small farmers and pig operators (production, transformation and commercialization) through the development of an educational training platform: knowledge about SPS requirements in export markets and the application of good agricultural and manufacturing practices (focus on prevention measures as swine biosecurity, good practices of hygiene and animal health).

The strengthening of biosecurity systems for pig livestock farms could also serve as a model for other livestock farms, enabling the dissemination of good practices in terms of managing the human-animal interface, which is essential for the sustainable improvement and resilience of our health systems (One Health), now weakened by Covid-19, in the face of emerging diseases.

6 https://enhancedif.org/en/system/files/uploads/lao_pdr_dtis_update_2012.pdf?file=1&type=node&id=2848

7 https://enhancedif.org/en/system/files/uploads/ctis_2019-2023.pdf?file=1&type=node&id=5640

The project proposes to target both large, medium and small pig operators and farmers because securing trade in pork products can only take place if the entire value chain implements biosecurity measures (e.g. transmission during transport, human handling, etc.).

It emerges that the farmers, employees, technicians who work in pig farms in Southeast Asia are generally poorly educated and sorely lacking in practical training. Few companies have understood the importance of having well-trained and competent staff to the success and competitiveness of their business. Some knowledge contributions are made, but very often by commercial companies wishing to sell a product (animal feed, veterinary products, equipment, etc.). The lessons are theoretical and not very objective about the ASF situation.

International companies are present in the niche of audits and on-site consulting, but little in technical and practical training. The training available is only theoretical and does not correspond to the initial training needs of the vast majority of people working on farms. The course materials used are very academic with a litany of text without illustrations and therefore very difficult to appropriate. As a result, the training needs at the level of these countries are considerable and call for the establishment of original and appropriate responses.

The design of an educational training platform made up of technical e-learning modules allowing players in the pig industry to self-train and self-assess their knowledge acquisition would be a real response to these needs. Its educational engineering will be innovative, based on feedback, field observations and the collection of needs. Co-constructed by multicultural teams from IFIP and local partners, the content will be envisaged, designed, tested and proven for and by these local partners. They will be developed so they can be used in practical field conditions with concrete cases on breeding sites featuring breeders and farm employees.

These applications will therefore correspond to the reality of the situations encountered on a daily basis. The design of the modules will start from the needs, the level of current knowledge and know-how in order to provide relevant answers and allow the teaching of practical know-how while ensuring a gradual increase in skills.

By this design, the e-learning modules will be resolutely attractive, allowing a scripted progression between the different breeding tasks, promoting the feeling of immersion by relying on virtual visits, opening on adapted complementary modules under such or such specific condition. They will allow learning with little text but with a library of photos, animations, illustrations, graphics and very explicit videos. The modules will be accessible remotely on all digital media (Computers, smartphones, tablets). Users will thus be able to recharge their batteries as soon as they need it, especially when they are in a farm situation. At the end of each chapter, a short-answer knowledge acquisition assessment will be offered.

The user will be able to choose their training topics à la carte according to their needs.

Trainings for breeders, farm employees but also future local trainers will also be carried out by IFIP experts because the tool will make it possible to instantly "switch" from English to the local language in order to optimize the transfer of knowledge and subsequently consider the implementation of training programs in pig farming in complete autonomy by each of the pig sectors in these countries.

The proposed project is based on a mapping of needs established through:

- the available results of the PVS assessment of veterinary services and the gap analysis of Vietnam,
- the final reports of previous STDF-funded projects (PGs), including PG 243 "Developing a sanitary and phytosanitary action plan for Cambodia",
- the analysis of the first results (socio-economic analyses, methods of change management with producers, etc.) of the pilot project funded by the International Commission of the ENSV-FVI since March 2021 on the reinforcement of biosecurity measures in Laos (pilots: CIRAD and AVSF),
- the outcomes of the dialogue established between the agri-food advisors of the economic services of the French embassies in Hanoi and Singapore, in collaboration with the partner veterinary authorities,
- Discussions with the regional agency and the national headquarter of AFD (French Development Agency),
- The Lao PDR DTIS update "trade and private sector development roadmap" (2012),
- The Cambodia trade integration study (2019-2023),
- Other academic research or economic studies (USDA, DG Tresor, CIRAD, Michigan State University, Australian Centre for International Agricultural Research.).

3. Links with national/regional development plans, policies, strategies, etc.

a) **Vietnam : a trade strategy that relies on an improvement of the sanitary quality in the livestock industry**

In early 2008, the Strategy on Animal Breeding up to 2020 was adopted that profoundly changed the direction of agri-cultural development policy. The government took note of the strong competition on international markets and decided that the livestock sector should be rapidly industrialized to cope with international dumping and to satisfy domestic demand. The principle objective of the strategy was to define the new work framework. By 2020, the animal breeding industry had to basically switch to commercial farm and industrial production in order to meet domestic and export demands for quality foods. Pig production increased from 27 to 35 million pigs.

The 2018 Law on Animal Husbandry put into effect the country's ambition to pursue the development of its livestock industry within a context of an increasingly integrated world economy, scientific and technological developments, industrialization, rapid urbanization, and ongoing climate change. The livestock development strategy aims to transform the livestock production sector into a modern industry that meets international standards regarding health safety, production quality, animal welfare and environmental management. This effort requires private sector investment, the backing of different levels of government and support from research.⁸

The Strategy on exports and imports for 2011-2020 enhances in particular, in SPS issues, the necessity of issuing technical standards for goods in line with international commitments in order to control the import of poor-quality goods which can cause negative impacts on environment and health, and tightening import management in conformity with international commitments and rules of the World Trade Organization (WTO). In the implementation plan of the livestock development strategy for the period 2021-2030, the importance of establishing epizootic-free zones for poultry (experimentation underway in Binh Phuoc province), pigs and cattle could appear. This experimentation could be a first step in the direction of animal disease free zones as foreseen by the zoning.

The proposed project will support the alignment of pork products to SPS standards to facilitate exports and will aim to better control pork imports. More specifically, the project will be in line with the "**National Plan for the Prevention and Control of African Swine Fever for the period of 2020 - 2025**" which was endorsed on 7 July 2020 and which set goals for ASF control, pig farm biosecurity application and laboratory capacity development to be achieved; defined restocking conditions, sampling requirements, surveillance, conditions for culling and moving-to-slaughter. Vietnam suspended the import of live pigs from Thailand from 30 June after detecting ASF from a batch of quarantined imported pigs.

b) **Cambodia: a greater consumer demand for pork than supply, which is turning more towards exports**

In Cambodia, 79% of the population lives in rural areas and depends mainly on agriculture for its subsistence. Livestock production is growing, aided by increased domestic demand, which is leading producers to turn to trade rather than self-consumption, as was previously the case. Domestic supply, however, is not sufficient to meet demand. Cambodia depends to a large extent on imports of meat from Vietnam and Thailand, and the lack of regulations and health controls, particularly in urban and peri-urban areas, penalizes the sector. **The imports are not controlled on a sanitary level today, which also penalizes the development of a local production of quality.** The risks of zoonotic diseases are still present and a large proportion of livestock farmers do not take sufficient account of the health risks posed by animal diseases. Livestock farming is essentially practiced on small farms, where bio-sanitary measures and the resources to implement them are limited, which favours the emergence and spread of infectious diseases.

⁸ Atlas of livestock transitions in Vietnam (1986-2016), IPSARD, CIRAD

Cambodia's Ministry of Agriculture, Forestry and Fisheries is carrying a **2019-2023 strategy to make the agricultural sector more competitive and resilient to climate change**. This five-year plan aims to develop agriculture and push the agricultural sector to modernize, become more competitive and resilient to climate change. The Cambodian government aims to shift agriculture from traditional practices to modern commercial agriculture, increasing productivity, diversifying crops and agricultural products to meet market needs, taking into account sustainability, globalization, and the use of modern technologies. The strategy urges the creation of agricultural cooperatives and calls on farmers to cooperate with investors in a public-private agricultural partnership.

By supporting farmers and pork operators in strengthening their productivity through the provision of self-training modules, particularly on biosecurity, this project will support the sustainable transition of the agricultural model in a modernization perspective.

As a WTO member, Cambodia still faces difficulties in its compliance with membership requirements. As a member of ASEAN and GMS (Greater Mekong subregion), it has to narrow its capacity gaps with more developed members and neighbours, especially Thailand, Vietnam and China. The support it has received for SPS capacity building has been relatively small, in part because of the complex institutional roles of agencies involved. Unlike Lao PDR and Vietnam, the many needs of Cambodia for capacity building have so far not been brought together in a comprehensive SPS capacity building strategy and action plan. The Diagnostic Trade Integration Study of 2007 touched upon SPS but with far less resources than were available for the SPS Action Plans of Lao PDR and Vietnam (*excerpt of ANNEX 1 STDF/PG/246TERMS OF REFERENCE*).

The proposed project will support Cambodia in enhancing effectiveness of SPS controls, as pointed out as a priority in its SPS plan. More specifically, the project will be in line with the Cambodian plan against ASF spread. Cambodia implemented movement control of live pigs, pork and pork products, stamping out, disposal and disinfection in affected villages. In response to the recent ASF detection at border checkpoints, the Ministry of Agriculture, Forestry and Fisheries ordered authorities to cull all pigs in the area, and the General Directorate of Animal Health and Production (GDAHP) is implementing ASF screening test on imported pigs using 'Portable PCR' at border quarantine stations. Due to the spread of ASF in neighboring countries, border provinces are requested to help stop illegal transportation of pigs into the country.

c) Laos: an under-exploited export potential

Over the past decade, Laos has experienced rapid economic growth and poverty reduction. Although the national poverty rate has steadily declined by 40% over the past 15 years, 26% of the population still lives below the poverty line. More than three-quarters of Laotians live in rural areas and depend on agriculture and natural resources for their livelihood. More than 80% of the population lives from agriculture, while more than half of households practice subsistence agriculture and earn less than \$300 per year. Agriculture is the pillar of the economy, but it is primarily practiced as a means of subsistence, and access to improved techniques and markets is, on the whole, very limited. Farmers use traditional cultivation methods and are unaware of new techniques and skills to improve yields. The country's geography offers opportunities to grow crops and exploit raw materials that can find high-value markets in neighbouring countries. Laos can be a gateway, as it offers the most direct land transport route between its neighbours that are bordered by the sea.

In 2006, a SPS Action Plan was adopted that included the first comprehensive assessment of SPS capacities in Lao PDR. The assessment found major weaknesses and gaps in the legal and regulatory framework, human capacities, work plans and technical capacities. The Action Plan recommended sustained support from the donor community for 29 actions for capacity building, including some studies. Most of the recommendations have been or are being followed up by the Government and Development Partners, although in several cases only very recently and with limited resources.

The present project will support Laos in implementing its SPS plan in the following areas:

- training for Government staff in certifying units and laboratories in international principles of conformity assessment and certification;
- support quality management in laboratories
- support the development of private sector.

More specifically, the project will be in line with the Lao action plan against ASF spread. After ASF outbreaks confirmed in 2019, The Ministry designates a Red Area around an outbreak, to control the movement of pig and pork products, and prohibits pork consumption; and a yellow Area (3 km radius from the red areas) as designated surveillance zones. When ASF reemerged in June 2020, the Government declared red zones and implemented movement control of animals and their products, destruction, disinfection, active surveillance, etc. As of December 2020, all zones have been lifted.

d) Philippines: foreign trade development ambitions undermined by ASF

The 2021 target agricultural growth for the country is 2.5%, with the objective of transforming the Philippine agriculture. The national strategy goal consists in fostering modernization of agriculture, in particular through technology and innovation, including digital agriculture, and food safety and regulations, and industrialization of agriculture, through global trade, export development and promotion.

The proposed project will therefore contribute to the ambition to further promote compliance with biosecurity standards in pig farms, which allow for the development of their productivity to become more export-oriented. The training of health authorities (official veterinarians and laboratory staff) will help meet the challenges of animal health and food safety regulations, which are essential to be able to export agricultural products.

More specifically, the project will be in line with the Philippine action plan against ASF spread. The country has been placed under a state of calamity for a period of one year due to the ASF outbreak effective 10 May 2021. The government has introduced greater surveillance, movement restrictions and penalties, increased biosecurity measures, culling and compensation schemes, including for backyard farmers (Department of Agriculture Communications Group, 2019). The local authorities in the Philippines are mandated to strictly follow the National Zoning implementation and movement plan depending on the level of ASF risks. The Department of Agriculture has allocated a fund of around PHP110 million (2.2 million US\$) to support pig farms under the national livestock program. The Department has also started a pig repopulation program and is considering a vaccination program, which is currently being tested.

4. Past, ongoing or planned programmes and projects

Since the outbreak of the crisis in 2019, the OIE and FAO have acted together through their collaboration under the Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs). In spring 2019, expert missions were conducted within the framework of the Emergency Management Centre for Animal Health (EMC-AH), notably in Cambodia and Laos, to assess the situation and provide recommendations to States. In the summer of 2019, a regional task force was created between the FAO, the OIE and the CIRAD (GREASE network) with a view to coordinating actions, creating synergies with potential partners such as the Wildlife Conservation Society (WCS) and Agronomists and Veterinarians Without Borders Association (AVSF), and seeking funding. Several global research alliances have focused on ASF control and vaccine development, and an international research alliance has been created (Global African Swine Fever Research Alliance, GARA). In February 2020, the Regional Workshop for the International Networking of African Swine Fever Research in Asia met in Japan and reiterated that even if an effective vaccine is developed, careful consideration should be given to how it should be used depending on the epidemiological situation, trade implications, vaccine characteristics and other factors.

Most of the current activities are carried out within the GF-TADs framework, using several sources of funding:

- **FAO:** ASF Technical Cooperation Programme (TCP), implemented by FAO directly with its own funds to the tune of \$0.55 million. The actions⁹ focus on support/training for laboratories and public veterinary services, the supply of equipment (including portable PCRs) and the financing of expert missions, such as FAO EMC-AH missions to Lao PDR to assess the ASF situation and preparedness and response strategy in June 2019 and to Cambodia in May 2019;

⁹ http://www.fao.org/ag/againfo/programmes/en/empres/ASF/FAO_Actions.html

- - **United States:** an emergency fund from the Office of Foreign Disasters (OFDA) has been released in the amount of \$1 million to the FAO, USAID's main partner in Asia for the implementation of funds dedicated to animal health in the framework of the Global Health Security Agenda (GHS). This funding targets four countries in mainland Southeast Asia (Cambodia, Laos, Vietnam, Myanmar), and focuses on strengthening institutional capacity for risk assessment, surveillance, response and communication. Additional funding has been made available by the Defense Threat Reduction Agency (DTRA) for the surveillance of transboundary wildlife-borne diseases (ASF, but also avian influenza) in Laos, Cambodia and Vietnam, this time to the NGO Wildlife Conservation Society (WCS).

The University of Minnesota is involved in the "Capacity Building in Risk Assessment to Support Safe International Trade of U.S. Pork Products in the Philippines and Vietnam". The Building Safe Agricultural Food Enterprises (B-SAFE) project and the DTRA project aim to strengthen animal health laboratories in the Philippines.

The Borlaug Fellowship Program currently has two planned fellowships for FY22 centered around African Swine Fever Research. The Fellows are from the Philippines and Vietnam. The Fellow from the Philippines will focus on developing a test kit for detecting the African Swine Fever (ASF) virus, while the Fellow from Vietnam will focus on vaccine development for ASF. The Cochran Fellowship Program also has a program planned for FY22 on Risk Based Management for Plant and Animal Products program for Vietnam. This program will be implemented by the Center for Animal Health and Food Safety (CAHFS) at the University of Minnesota (UMN), which is one of five World Organization of Animal Health (OIE) collaborating centers focused on Capacity Building of Veterinary Services for OIE advanced competencies. The USAID Mission in Vietnam is involved only peripherally in ASF prevention and control, primarily through its Global Health Security (GHS) program. The GHS program in Vietnam maintains a One Health focus on emerging and serious zoonotic diseases, especially those with pandemic potential, and on identifying and mitigating risks of spillover from wildlife and livestock to humans.

There are areas of common interest for USAID-funded partners engaged in One Health and zoonotic diseases, including FAO as well as the Vietnam One Health University Network (VOHUN, a 22-university network which includes several veterinary schools), the Infectious Disease Detection and Surveillance (IDDS) project, and the Transformational Strategies for Farm Output Risk Mitigation (TRANSFORM) project, a largely private sector activity led by Cargill and focused on the swine and poultry industries (and shrimp).

- **OIE:** activities centred on expert missions, the organisation of regional workshops, information (OIE website and WAHIS interface) and communication (production of leaflets), for which the OIE mobilises its own budget supplemented by external funding.¹⁰

Finally, the project will also benefit from the analysis of the first results (socio-economic analyses, methods of change management with producers, etc.) of the pilot project funded by the International Commission of the ENSV-FVI since March 2021 on the reinforcement of biosecurity measures in Laos (pilots: CIRAD and AVSF, \$9520).

The project aims to provide scientific support and action research to better understand the actors in the Laotian pig industry and to identify the barriers and levers that can limit or promote the adoption of changes in practices by farmers in the area. The objective is also to propose specific methodologies and tools to monitor innovation and identify success and failure factors, based on the participatory methods developed by CIRAD, the ImpresS approach, and the Impact of Research in the South. In addition to these action research and impact assessment activities, CIRAD and AVSF will offer training content for AVSF agents and Laotian partners involved in the field in the form of webinars that can be followed either live or as podcasts on the Internet.

The project relies on the GREASE network, created and operated by CIRAD to support "research activities for better management of emerging epidemic risks in Southeast Asia".

According to the OIE and the FAO, three major fields of action still need to be covered today, both at institutional and operational levels: (i) surveillance and management of epidemiological outbreaks (early detection, control mechanisms, etc.), and the effective implementation of "biosecure" systems at the level of (ii) production and (iii) commercialisation.

The proposed project aims to operationalise these recommendations, by training official veterinarians, laboratory staffs and pig farmers and operators, working on both the institutional and operational levels. The recommendations of the GF-TAD will be taken into account as a basis for the training of official veterinarians, laboratory staffs and pig operators. They present a scientifically

¹⁰ Inventory of programs carried out by Agronomes et Vétérinaires sans Frontières (AVSF)

supported needs map. The communication material already produced under GF-TAD can be presented during the official veterinarian Training of trainer workshops. The progress of the project will be communicated to the GF-TAD on a quarterly basis in order to be transparent and to collect recommendations for the effectiveness of the project.

It is noteworthy, eventually, that the STDF has funded already 5 PGs on SPS topics in the Asia-Pacific region, all of which have been completed with a strong focus on trade in plant products, and one PG in animal health (Mongolia). The STDF contributed largely to the consideration of the SPS topic in the region, thanks in particular to a research work "*Overview of SPS capacity building needs assessment and compliance studies for Cambodia, Lao PDR and Vietnam 2000-2006*" which was realized by Kees van der Meer for the STDF.

In the wake of this research work, as part of the Aid for Trade Initiative, the STDF held a regional workshop on the mobilization of resources for SPS capacity building in Phnom Penh, Cambodia from 21-22 May 2008. The workshop concluded a year-long process to synthesize the results of SPS capacity evaluation studies in the GMS, conducted by international organizations including FAO, the OIE and the World Bank. Specifically, it mapped existing and planned SPS assistance in Cambodia, and identified outstanding gaps and priorities in consultation with government agencies and development partners. The development of a comprehensive SPS action plan for Cambodia was identified as a particular capacity need at this workshop. It has been implemented via the STDF, with FAO as the implementing entity, in 2008 (STDF/PG/246).

The proposed project will attempt to meet the objectives of the SPS action plans of Cambodia and Laos in the areas of animal health in exports (surveillance, certification, analysis, biosecurity measures...).

5. Public-public or public-private cooperation

The OIE points out that to address ASF, public-private partnerships are a major priority as the pork value chain encompasses not only farmers, but also actors in the areas of input supply, processing, marketing and sales, and consumption. Therefore, improved knowledge sharing, increased awareness and trust among public and private stakeholders are fundamental to implementing effective and coordinated ASF control strategies.

This is why the proposed project aims to integrate both the institutional veterinary control stakeholders, i.e. the official veterinarians and laboratory staffs, and the private stakeholders, i.e. the pig farmers and operators (including commercialization, transformation, transportation...), who are responsible for implementing the biosecurity measures necessary to meet the SPS standards of the trade. By building the capacity of both ends of the value chain, in a win-win situation and a climate of trust, it is more likely that, sharing the same objectives and understood in the same way, all parties in the chain value will be more inclined to comply with SPS standards. Pig industry professionals will also be invited to the launch, mid-term and closing seminars. A mailing list of contacts will be provided by the technical coordinators of the partner ministries.

In addition, one of the points of vigilance brought to the attention of the stakeholders in steering committees on a quarterly basis will be **the association of the ministries of health or trade with the ministries of agriculture partners of the project** (see logical framework). The Ministries of Health and Trade will also be invited to the launch, mid-term and closing seminars. They will have to be able to receive the project's progress. The technical coordinator of each of the partner ministries of agriculture will provide a list of contact stakeholders to be associated within these ministries. One of the points of difficulty in appropriating SPS measures is indeed to include all the ministries concerned by the implementation of these measures.

6. Ownership and stakeholder commitment

As attested by the letters of support from the ministries of agriculture in charge of animal health control in trade (see appendix), in accordance with the Paris Principles on Aid Effectiveness and the Accra Agenda for Action, the proposed project is in line with the national priorities of the 4 countries.

The partners of the proposed PG are:

-Vietnam: The Directorate of Animal Health (DAH): The veterinary administration belongs to the Department of Animal Health DAH (central level), with services in each province. The Department of Quality Control of Agricultural, Forestry and Aquaculture Products is responsible for the safety of processed products.

The DAH is composed of 7 divisions, including an "epidemiology" division in charge of the prevention and control of animal diseases, a "legislation and inspection" division in charge of drafting animal health regulations, a "planning and international cooperation" division in charge of implementing international projects and a specific "veterinary drugs management" division. The DAH also administers control points at land borders, ports and airports through the Inspection and Quarantine Division, which is also responsible for meat inspection at markets and slaughterhouses. The national veterinary services are supported by a national network of laboratories active in veterinary research, diagnostics, drug quality control and hygiene, as well as a network of 6 regional centres with their own laboratories.

-Cambodia: The General Directorate of Animal Health and Production (GDAHP): The veterinary administration is under the control of the General Directorate of Animal Health and Production (GDAHP), which is the lead agency within the Ministry of Agriculture.

Animal health services are largely provided by government staff. The few existing veterinary clinics, mainly dedicated to pets, are located in the capital and major cities. The better equipped ones sometimes have a laboratory bench for basic diagnostic tests, but there are no private diagnostic laboratories. Some veterinary officers also run their own private clinics.

-Laos: The Directorate of Livestock and Fisheries (DLF): In Laos, the food safety system is highly decentralised: most veterinary duties are the responsibility of the 17 provincial fisheries and livestock departments (PAFOs), which receive technical advice from the DLF while maintaining their independence. These departments deal with meat inspection in slaughterhouses and at international control points (12 in total) as well as the sale of medicines and the practice of veterinary medicine. These tasks are shared with the 141 district departments (DAFOs). Seven regional departments are also equipped with diagnostic laboratories, which lack qualified staff and budget for operation and training.

-Philippines: The Department of Agriculture, in which the Bureau of Animal Industry (BAI) is responsible for unprocessed products and live animals/genetics. Another agency, the National Meat Inspection Service (NMIS), is involved in the safety of raw meat (including market access procedures). The coordination of SPS market access negotiations is carried out by the BAI, which remains the contact point.

The Department of Agriculture oversees a dozen technical "offices" equivalent to directorates-general but also agencies such as the NMIS.

-ENSV-FVI federates, coordinates and promotes French expertise, both public and private, in all areas of veterinary public health at international level.

As an OIE Collaborating Centre for Europe, ENSV-FVI supports the implementation of international standards (OIE, Codex alimentarius) in partner countries.

-IFIP is a research-innovation institute, whose particularity is to be an agricultural and agri-food industry institute that accompanies all the components of the pork industry on, in particular, the following issues: modernization, digitalization, optimization of resources, biosecurity, animal welfare, meat and product quality. The Institute's team includes 80 engineers and technicians. IFIP has collaborated in numerous international public and private partnerships, particularly in Asia, which have thus enabled it to acquire a detailed knowledge of the peculiarities of the contexts of pig production.

-APHIS/Vietnam would be welcome as observers to the project.

II. PROJECT GOAL, OBJECTIVE, OUTPUTS & ACTIVITIES (LOGICAL FRAMEWORK)

7. Project Goal / Impact

The overall goal of the project consists in securing trade in pork and pork products in the context of the spread of ASF in 4 ASEAN countries (VN, LA, KH, PH) by training official veterinarians (SPS measures), farmers and pig operators (means of competitiveness and biosecurity) and laboratory staffs (diagnoses of ASF and other transboundary animal diseases) in order to facilitate trade which

is a **vector of economic growth for these countries and a guarantee of food security of the population that relies mainly on pork in their diet and as a means of subsistence.**

8. Target Beneficiaries

a) Official veterinarians/Laboratory staffs: According to the OIE, the following three pillars make the case for investment in veterinary services and animal health laboratories, in accordance with SDGs 16 and 17:

- First, investment in veterinary services is a prerequisite for pursuing critical health objectives by reducing costs through the prevention and control of health crises through compliance with internationally agreed health standards and regulations;
- Secondly, investing in veterinary services yields a positive return on investment in terms of reducing poverty and hunger and facilitating safe trade;
- Thirdly, investment in veterinary services produces other societal benefits, including the creation of employment and educational opportunities for younger generations, the empowerment of women, the provision of essential services, and increased resilience to disruptions and threats (prevention and control of health crises through compliance with internationally agreed health standards and regulations).

In this project, the partner administrations will receive training in the following specific areas (non-exhaustive list, depending in particular on the prior existence of surveillance and control plans for ASF. Support may be provided if none exists or if the plan proves insufficiently effective):

1) Certification for trade: general rules

- Definition of international sanitary standards for trade
- Design of a health certificate

2) Export certificates: the responsibilities of the certifying veterinarian

- Missions and functions of certifying veterinarians
- Examples of certificates: are they compliant?

3) Import certificates: are border controls or import regulations effective?

- Border inspection post: missions and infrastructure
 - Internal organization of a border inspection post and control procedure.
- The critical PVS skills that should be strengthened during the trainings are:
- Section II-4 Quarantine and border security,
 - Section IV-3 International Harmonization,
 - Section IV-4 International Certification,
 - Section IV-5 Equivalence agreements and other types of sanitary agreements,
 - Section IV-6 Transparency,
- Transversal skills: Section III-1 (Communication), Section III-2 (Consultation of stakeholders), Section III-3 (Official representation).

It is noteworthy to signal that vaccines for ASF could be a topic of discussion in the trainings, given that it could be changing the landscape of ASF control. Once vaccines become available for ASF, their use must be embedded in an ASF control and prevention policy that is based on a sound understanding of ASF epidemiology within the local eco-social context, including human behavior-associated risk pathways and human behavioral responses to the different policy instruments. Vaccines will not replace the need to achieve behavior change among key actors along the pork value chain to effectively control the spread of ASF.

b) Pig farmers and pig operators (production, transformation, commercialization): The General Director of the World Organisation for Animal Health (OIE) warned on the ID4D blog on 21 September 2020 that ASF threatens an entire production system in South-East Asia. Such significant production losses have a direct impoverishing effect on livestock families, leading to a deterioration in their access to health care and education, and sometimes to a loss of social status. The impossibility of controlling the disease in the short term due to the lack of a vaccine and the difficulty of applying strict biosecurity measures contributes to a downward spiral towards long-lasting poverty. National policies for a possible restructuring of the sector with a gradual shift from family production to industrial structures where biosecurity is easier to control could be an answer that Asian countries are developing (massively industrialised systems) to the detriment of the family and semi-industrialised systems traditionally present in the region. Instead, the project will help maintain

the type of farming and marketing that exists in Asia, as biosecurity measures will be effectively deployed, stemming the spread of disease and the temptation to hyper-industrialisation (SDGs 2 and 8).

c) Producers/consumers: While this crisis primarily affects vulnerable countries and populations, particularly in rural areas, it also has direct global repercussions on both producers and consumers. This pre-existing crisis thus exacerbates the global crisis caused by the Covid pandemic 19. Beyond the risk of spreading the virus, this epidemic undermines the stability of global markets and value chains. The fall in pork production in China (1.2 million pigs slaughtered since August 2018), which is by far the world's leading producer with 335 million heads in January 2020 (i.e. more than 50% of global stocks), but also in Vietnam (6 million pigs slaughtered since February 2019), has caused a general rise in pork prices worldwide, rising from around €1.35/kg at the end of 2018 to nearly €1.90/kg in March 2020 on the European market (+40%). The consequences of this crisis are not limited to the pork industry alone: According to the FAO's monthly food price index of December 2019, the price of foodstuffs has recorded its highest annual increase since July 2017 (+10%), while the price of meat has risen by 18% (its highest increase in 8 years) and that of vegetable oils by 10% compared to 2018 ; a strong trend driven by China (the world's leading consumer of meat, accounting for a third of the market) and the massive increase in its imports (+50% for pork and poultry) to compensate for the loss of its livestock, even though regional pork production is itself very weakened. Other collateral damage is expected, notably on the European cereal sectors for livestock feed (maize, soya) but also the pharmaceutical industry (production of insulin) and other derived products (plastics, insulation materials, fertilisers, etc.) which use many materials derived from pigs (gelatine, bone materials, proteins, etc.)¹¹. It is therefore essential to curb the spread of ASF because of its impact on prices for both producers and consumers.

d) Citizens (food security of the local population): Pork is, along with fish, a major source of protein in many South-East Asian countries.

In Vietnam, pork is the first meat consumed with 3.1 million tons. Pork is the main source of calories and animal protein. The importance of this meat traditionally cooked and consumed in households was illustrated in 2020, with a significant recovery in meat consumption and prices, at the time of the containment measures (as opposed to beef, which is festive meat, consumed in restaurants, and poultry, which is consumed in fast-food restaurants and school meals¹²).

In Laos, already heavily affected by severe and chronic malnutrition, pork is the second most important source of protein in the country after fish. To the latest FAO report (July 12, 2021) on the "State of Food Security and Nutrition in the World", more than half of the total number of undernourished people are in Asia (418 million people). "In South-eastern Asia, rural poverty among smallholders is exacerbated by the lack of access to productive resources and poor market integration, further compounded by climate-related and economic shocks, as well as periodic plant and animal disease outbreaks". In the context of the current COVID crises, the FAO underlines the risk of an impending food crisis if measures are not taken quickly to protect the most vulnerable, support global food supply chains and mitigate the effects of the pandemic on the entire food system. To mitigate the risks to food security and nutrition, the FAO recommends ensuring the resilience of their agricultural sector, as proposed by the project (SDG 2).

(a) Gender-related issues

Women, who account for between 40 and 50% of the agricultural workforce in East and South-East Asia according to the FAO, play a key role in agricultural and livestock production, food security and nutrition. Their role is particularly important in pig farming, for which they are generally responsible. This project will seek to better promote the role of women in the pig industry, both in production and marketing, and the impact of ASF on their activities, in order to put in place appropriate solutions to ensure equal access for women and men to resources, training, information and services (SDG 5).

To the Generation Equality forum, initiated by UN Women and co-chaired by France and Mexico (2 July 2021), the Covid 19 pandemic has had a much greater impact on women than on men. This is why it will be necessary to ensure, as far as possible, that as many women as possible are included in the target audience of the training courses proposed in the project, especially on farms and among pork operators where women workers may not be able to read. The digital application proposed by

¹¹ Analysis carried out by Agronomes et Vétérinaires sans Frontières (AVSF)

¹² <https://agritrop.cirad.fr/593983/>

IFIP, based on illustrations and visuals, will still allow training of these women. A specific indicator is included in the project's logical framework, and will be studied during the steering committees. The availability of the digital trainings and the encouragement of women to participate to the trainings will be made possible through the network of AVSF (Agronomes et Vétérinaires sans Frontières), partner of ENSV-FVI in the Asian region, which who works alongside them on a daily basis.

The place of women in veterinary services will also be a key indicator. Because there are still too few women today, it will be necessary to ensure that the ENSV-FVI training is offered to them in the same way as to male staff.

This project will also comply with the Vietnamese Strategy for Gender 2011-2020 and the Lao PDR DTIS trade and private sector development roadmap that stresses the need of women empowerment in trade, and more largely, with the EIF initiative aiming at transforming the economic lives of women in LDC; *"Research shows that promoting women's economic participation, especially in developing countries, could increase global economic growth by US\$12 trillion by 2025"*.

9. Project objective, outputs and activities (including logical framework and work plan)

The immediate objective consists in improving the implementation of biosecurity measures to prevent and control ASF across much of the value chain (official veterinarians, pig operators and laboratories) in the perspective of a safer trade.

The project proposes the following 3 outputs:

- Output 1: an improved understanding of the SPS standards to be implemented by official veterinarians with regard to the prevalence of ASF (focus on surveillance, control, biosecurity measures, certification, etc.),
- Output 2: a better competitiveness of pig operators and farmers (understanding and dissemination of the educational training platform modules dedicated to biosecurity, animal health, maternity, fattening)
- Output 3: an improvement by central laboratories of diagnostic methods for the analysis of cross-border animal diseases, including ASF.

All the proposed training devices will be aligned with the standards, guidelines and recommendations of the OIE (eg the OIE [Compartmentalisation Guide](#)) and CODEX, especially since the ENSV-FVI is one of the 8 collaborating centers of the OIE in the field of training of official veterinarians. Its vocation is to mobilize its expertise in "veterinary training and capacity building; veterinary education" in support of the OIE and its Member Countries, in line with the OIE Strategic Plan. One of its missions is to support the implementation of international standards (OIE, Codex alimentarius).

The activities to be carried out to achieve the specified outputs are the following:

Output 1: Develop the skills of official veterinarians in SPS and trade in a context of ASF prevalence

At the end of the implementation of the output 1, the official veterinarians will be able to:

- improve early detection, early warning, and rapid response, based on robust national surveillance systems that incorporate the participation of veterinarians and pork producers,
- prevent the occurrence of ASF and reduce its potential impact on pig farms,
- develop policies, strategies and plans for the progressive control of ASF in accordance with OIE standards (early detection, rapid response, diagnosis, etc.),
- explain the foundations of SPS agreements and know how to follow the evolution of international health standards in a context of ASF,
- negotiate the sanitary conditions of import and export in a context of ASF,
- design health certificates (export), control health certificates (import);
- explain the differences in conformity with respect to the expected standards and to propose actions to comply and secure trade in a context of ASF.

The official veterinarians who will be trained in these technical topics will also be trained in pedagogical methods to disseminate the learnings to veterinarians working in the field.

The improved understanding of the above-mentioned issues will be determined by the assessment of the trainers through quizzes and evaluations according to the method of analysis of the pedagogical assets in force at the ENSV-FVI.

Activity 1.1: Adaptation of French training content on SPS and trade for the 4 partner target audiences

Sub-activity 1.1.1: "Needs mapping based on a pilot project (AVSF and CIRAD) implemented in Laos in mid-2021" consists in mapping of capacity building needs in the pork value chain carried out in Laos, with analysis of the transpositions required for the other 3 countries.

Sub-activity 1.1.2: "Development of face-to-face training content (pedagogical engineering) and associated training plan in agreement with partner ministries/ translation" will be assured by 2 pedagogical engineering experts of ENSV-FVI and CIRAD (15 consultancy days. Activity in France) to create the most adapted face-to-face training module for the official veterinarians of the 4 countries, in a logic of training of trainers + establishment of a dissemination plan/ translation of support documents in the 4 languages and in English. The materials of the workshops will have to be validated by the technical coordinators of the partner ministries, in order to best meet their needs. The technical coordinators of the 4 countries will also be responsible for assessing current programmes to identify training needs, in connection with the pedagogical experts of the ENSV-FVI.

Activity 1.2: Dissemination of face-to-face training modules for the implementation and enforcement of SPS in trade

Sub-activity 1.2.1: "Training of official veterinarians in Vietnam": 3 trainings of trainers will be organized between 2022 and 2024 in Hanoi by 2 ENSV-FVI experts during 2 days each. The target audience is 50 Vietnamese official veterinarians. The content of the training is indicated in point 8 of the application form.

Sub-activity 1.2.2: "Training of official veterinarians in Laos": 3 trainings of trainers will be organized between 2022 and 2024 in Vientiane by 2 ENSV-FVI experts during 2 days each. The target audience is 50 Laotian official veterinarians and extension officials. The content of the training is indicated in point 8 of the application form.

Sub-activity 1.1.3: "Training of official veterinarians in Cambodia": 3 trainings of trainers will be organized between 2022 and 2024 in Phnom Penh by 2 ENSV-FVI experts during 2 days each. The target audience is 50 Cambodian official veterinarians. The content of the training is indicated in point 8 of the application form.

Sub-activity 1.1.4: "Training of official veterinarians in Philippines": 3 trainings of trainers will be organized between 2022 and 2024 in Manila by 2 ENSV-FVI experts during 2 days each. The target audience is 50 Philippine official veterinarians. The content of the training is indicated in point 8 of the application form.

Activity 1.3: Long-term sustainability of the training through a continued distance e-learning program

Sub-activity 1.3.1: "Integration of 3 official veterinarians per country in the e-cerise distance learning program": e-CERISE ([Online Continuing Education for veteRinary Services](#)) is a diploma course. 12 modules are offered also individually ("à la carte" modules: "health standards for international trade", "epidemiological surveillance", "prevention, control and eradication of animal diseases", etc.). Each of the modules is calibrated for a 3-day learning period (3 x 6 hours) per month with webinars and distance learning tools and tutoring by a pair of experts (veterinary teacher and official veterinarian).

3 official veterinarians from Vietnam, Laos, Cambodia and Philippines are proposed to be included in this program during 1 year (online during 10 months and a 4 days face-to-face session per year in France for each participant).

The choice of official veterinarians selected to participate in the above-mentioned training workshops (face-to-face and e-learning) is based on the technical coordinators of the partner ministries. They will be responsible for identifying those officials who they feel are most competent to disseminate

good practice and who have the most responsibility, and therefore impact, in the implementation of SPS measures (within or outside of their ministries, in coordination with the ministries of trade and health).

They will also have to make the case for the necessary availability of the partner ministries so that these agents can participate in the training courses.

Output 2: Develop the skills of farm managers and pig operators in strengthening the management of pig farms and the implementation of biosecurity measures

At the end of the implementation of the output 2, pig farmers and pig operators will be more aware of good biosecurity and general husbandry good practices in order to ensure the protection of pork production, increase the competitiveness and the safety of trade. The better competitiveness will be determined with regard to the analysis of the commercial figures of the pig operators in particular. It should be noted that the structuring of the pork industry into groups of producers is also an indicator by which to measure the gain in competitiveness.

Activity 2.1: Mapping of needs for the design of modern pig farming modules and support to its implementation for the reinforcement of biosecurity measures in pig farming

The choice of pig operators and farmers likely to be interested in using the educational training application can be supported by the technical coordinators of the partner ministries, who are their first contacts and who know where this training action will have the most impact on the development of biosecurity measures in the country, among other pig operators. They will be kept informed of progress in the spread of the application by the IFIP technical coordinator.

Sub-activity 2.1.1: "Experts' mission to Vietnam, assessment of the situation, collection of needs and creation of contextual digital teaching materials": Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Vietnamese farms will be carried out. A digital database of teaching aids for the design of modules will be set up, based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.

Sub-activity 2.1.2: "Experts' mission to Laos, assessment of the situation, collection of needs and creation of contextual digital teaching materials": Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Laotian farms will be carried out. A digital database of teaching aids for the design of modules will be set up, based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.

Sub-activity 2.1.3: "Experts' mission to Cambodia, assessment of the situation, collection of needs and creation of contextual digital teaching materials": Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Cambodian farms will be carried out. A digital database of teaching aids for the design of modules will be set up, based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.

Sub-activity 2.1.4: "Experts' mission to Philippines, assessment of the situation, collection of needs and creation of contextual digital teaching materials": Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Philippine farms will be carried out. A digital database of teaching aids for the design of modules will be set up, based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.

Activity 2.2: Design and adaptation of modern pig farming e-learning modules and support its deployment to reinforce biosecurity measures in pig farming

Sub-activity 2.2.1: "Development of the content of the e-learning modules (pedagogical engineering) and exchanges/validation/translation with local partners": A pedagogical

engineering of IFIP (2 experts over 5 days. Activity in France) will be provided for the design of 5 e-learning modules on the management of breeding at the 4 physiological stages (maternity, verraterie-gestating, post-weaning, fattening) and of a transversal module on the implementation of good hygiene and biosecurity measures for the prevention of ASF. The adaptation to the diversity of the situations of the 4 countries in a practical training logic will be assured (translation of the support documents in the concerned languages and in English).

Sub-activity 2.2.2: "Design, adaptation and translation of swine management and biosecurity implementation modules in Vietnam": The pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way will be designed. Self-assessment questionnaires of acquired knowledge will be realized. The modules will be translated in Vietnamese language.

Sub-activity 2.2.3: "Design, adaptation and translation of swine management and biosecurity implementation modules in Laos": The pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way will be designed. Self-assessment questionnaires of acquired knowledge will be realized. The modules will be translated in Laotian language.

Sub-activity 2.2.4: "Design, adaptation and translation of swine management and biosecurity implementation modules in Cambodia": The pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way will be designed. Self-assessment questionnaires of acquired knowledge will be realized. The modules will be translated in Cambodian language.

Sub-activity 2.2.5: "Design, adaptation and translation of swine management and biosecurity implementation modules in Philippines": The pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way will be designed. Self-assessment questionnaires of acquired knowledge will be realized. The modules will be translated in Philippine language.

Activity 2.3: Dissemination and training in modern pig farming modules and support for its implementation to strengthen biosecurity measures in pig farming

Sub-activity 2.3.1: "Implementation of e-learning modules: hosting on an Learning Management System (LMS) platform, face-to-face training of professionals and future trainers to the modules of pig farming and implementation of biosecurity measures in the 4 partner countries": The ability of hosting of the e-learning modules on a server with the possibility of an LMS platform will be studied. A dissemination plan based on the established mapping/action plan will be realized, and the training workshops for professionals will be organized. Training sessions for trainers with professional organizations in charge of distributing the tool to their members will be also implemented.

Output 3: Develop the skills of central animal health laboratories for better identification of ASF and other transboundary animal diseases

ASF may be suspected on the basis of clinical signs; it must be confirmed by laboratory tests, especially to differentiate it from classical swine fever (CSF). At the end of the implementation of the output 3, the diagnostic capacity of central laboratories will be enhanced in order to better prevent and control the disease.

Activity 3.1: Identification of capacity building needs of central animal health laboratories

The technical coordinators of the 4 partner ministries will be involved in mapping the training needs for capacity building in diagnostics (animal health) of the central laboratories and will be responsible for coordinating the proper implementation of these trainings.

Sub-activity 3.1.1: "Mapping needs to adapt technical support and capacity building for central analysis laboratories (animal health)": the technical support needed by laboratories in the 4 countries for priority animal transboundary diseases (including ASF) need to be identified

through a mission by 2 experts to central laboratories in the 4 countries (2 days per central laboratory).¹³

Activity 3.2: technical and operational support for central laboratories, training of laboratory operators and professionals related to laboratory activities

Sub-activity 3.2.1: "Face-to-face training central laboratory staff in animal health": A training session, according to the transboundary animal diseases identified as priorities (including ASF) will be organized via one in situ training session for the operators of the central laboratories of the 4 countries/ 2 experts (2 days).

See the logical framework (i) and detailed work plan (ii) attached.

(iii) Terms of reference:

a) National experts mandated by ENSV-FVI:

Output 1: All proposed experts are veterinarians with more than 3 years of experience, familiar with international health regulations (Codex and OIE standards) and their implementation requirements. The technical knowledge required is the following:

- Epidemiology of ASF, including risk-based surveillance,
- Prevention and control strategies,
- African Swine Fever risk communication,
- Use of zoning and compartmentalization,
- Border control measures,
- Export certification.

They work either at CIRAD (French agricultural research and cooperation organization working for the sustainable development of tropical and Mediterranean regions), or in the central administration of the Ministry of Agriculture (DGAI), or in Departmental Directorates for the Protection of Populations (ie Ministry's services in the 101 French departments), or in the 4 veterinary schools in France.

The 2 experts in charge of the creation of the training content correspond to a pair of experts made up of a project educational engineer and an official veterinarian specialized in the management of ASF in France.

They will be responsible for verifying the satisfaction of the technical coordinators of the 4 partner countries with the proposed module and the associated training plan (adaptation to needs, feasibility and impact criteria taken into account, proposal for tools to evaluate the skills acquired by the official veterinarians).

During the trainings, the pair of experts (not always the same one, depending of the availability in our pool of experts) will take into account:

- the satisfaction expressed by the trained agents,
- the rate of women trained per country,
- the follow-up of the good dissemination of the training in the field,
- the analysis of the knowledge acquired through a knowledge survey.

In view of the distance between Hanoi, Vientiane and Phnom Penh, the same pair of experts could provide the trainings for the 3 locations in a round.

Output 3:

The ENSV-FVI relies on the expertise in the field of laboratories of two of the members of its International Commission: **Adilva (French Association of Directors and Managers of Public Veterinary Analysis Laboratories) and ANSES (National Food Safety Agency).**

¹³ It is to highlight that through Global Health Security Program (GHSP) funding, USAID contributes \$250,000/year to FAO Laos to provide technical assistance on laboratory system and surveillance system strengthening that covers the capacity to detect, investigate and control the Africa Swine Fever in some high-risk provinces in Laos.

ADILVA is an organization of experts in animal health, plant health, food hygiene and environmental controls. It brings together 74 departmental laboratories in France, whose main mission is to guarantee the independence, expertise and permanence of sanitary controls, and to contribute to the protection of public health in the territories by actively participating in epidemiosurveillance and sanitary monitoring.

Its strong points are:

- its ability to mobilize and take charge of emergency analyses in crisis situations to respond to requests from State services.
- its ability in implementation of on-call duty in crisis situations (e.g.: avian influenza, ASF).

ANSES is responsible for risk assessment in its areas of competence which include human health, animal health and welfare and plant health. It relies on a network of 11 reference and research laboratories located in 16 different regions of the country. These laboratories operate in three main areas: animal health and welfare, food safety (chemical and microbiological) and plant health. In addition to national reference mandates from the national government, ANSES has reference mandates from the European Commission, the World Organization for Animal Health (OIE) and the FAO.

b) National experts mandated by IFIP:

Output 2: the fields of competence of the experts mandated by the IFIP are the following:

- Training and technical and professional swine education,
- Pedagogy,
- E-learning,
- Techniques and practices of swine farming,
- Marketing,
- Epidemiology and surveillance plans,
- Control and management of pig farms,
- Biosecurity
- Transport of live animals

They all have professional experience in the field of swine farming and have participated in or created online training modules for the profession on behalf of IFIP.

They may have conducted external and internal biosecurity training for veterinarians, and training of trainers in African Swine Fever prevention measures.

10. Environmental-related issues

First of all, pigs are a key factor in recycling domestic waste into organic matter in Southeast-Asia. By reducing access to a natural, efficient and cost-free means of fertilising the soil, the crisis represents a risk of overuse of chemical fertilisers, often of poor quality and already on the increase, but also of antibiotics, with a direct impact on human, animal and environmental health (*One Health*). The replacement of pig farms by poultry, which is already at stake in Southeast Asia, on such a large scale and in such a short period of time, presents the risk of the (re)emergence of other animal diseases, including zoonoses such as avian influenza (HPAI), which is still endemic in several countries in the region. The scale of the crisis also raises fears of the disappearance of local breeds of pigs, which are particularly adapted to agro-climatic conditions and therefore more resilient (diseases, feed), and thus of a reduction in pig genetic capital worldwide.

Secondly, the ASF virus, like that of COVID-19 today, is also indicative of a major global trend: the resurgence and appearance of new diseases (human, animal and zoonotic), and their accelerated spread. Growing urbanisation, intensified global economic exchanges and climate change responsible for the degradation of ecosystems are among the primary factors behind these crises, particularly in South-East Asia, a region identified by the scientific community as a global hotspot for both biodiversity loss and emerging diseases. The lack of veterinary services is an aggravating factor in many countries, which become both victims and vectors of these epidemics¹⁴.

Finally, the "agro-ecological" dimension is at the heart of the proposed project, which aims to support sustainable farming systems and pig operators in the face of the temptation to respond to the ASF crisis by developing intensive industrial mono-livestock systems that are "more biosecure", as is already the case in China. Indeed, the response of the authorities challenging the spread of ASF in Southeast Asian countries is the development of hyper-industrialized farms where biosecurity

¹⁴ Agronomes et Vétérinaires sans Frontières (AVSF)

measures are easier to implement, but this will lead in the medium term to the disappearance of small traditional farms. These large hyper-industrialized farms do not correspond to the model of sustainable farming systems.

11. Risks

Risk	Probability of realization	Effects	Corrective measures/mitigation	Hypotheses
-difficulty in coordinating on the field level (ie decentralized countries) -poor implementation of decisions at the relevant level	Very High	- Less consistency and sustainability of results Delays in the implementation of expected results	- Ensure that all concerned parties and stakeholders are properly informed and involved at all stages of the work; - Clarify the chain of command, particularly at the decentralized level	Identification of relevant correspondents and decision makers involved at all levels
Difficulties (or delay) in launching, validating or approving strategic documents (training plan)	High	Impossibility to take into account the recommendations of experts in the field	Establish good working relationships with policymakers early in the project to ensure strong political support for the training program	Decision-makers are committed to introducing biosecurity changes and procedures at all consistent territorial levels
Insufficient and underestimated administrative and legislative architecture and capacity to ensure sustainability of policy and procedural changes	Very high	Impossibility to implement the expected results	Training and expertise missions Short-term experts advices	Recruitment by the partner authorities of the necessary officials and training by the short-term experts
Lack of buy-in from the authorities	Low	The lack of government buy-in could undermine the project impacts.	A local government scientist (vet) could co-lead the needs mapping exercise, report back to the Minister. The government Minister's offices could be regularly briefed on the progress/results of the project. Briefings could be led or co-led by government employed veterinarians. Briefing schedules would be included as a deliverable. The 3 seminars will bring together government Ministries and partner-country embassies to discuss project results and policy implications. Multiple events (before/after) could be organized.	Good communication between all stakeholders

12. Sustainability

The project is intended to be long-term, beyond the 3 years funded by the STDF, which will make it possible to lay the foundations for sustainable veterinary, academic and economic cooperation in the field of animal health. In particular, the project will make it possible:

- to structure a sustainable partnership between project partners in the 4 countries, the **French teaching and research institutions** (VetagroSup/ENSV-FVI, CIRAD, the 4 French veterinary schools) and **those of the 4 partner countries**;
- to identify the **pool of teachers and veterinarians** from the 4 partner countries who could continue their training in the form of a PhD in collaboration with the above-mentioned institutions;
- identify the **official veterinarians from the 4 partner countries to be integrated in the long run** in the e-learning training programme and in the face-to-face training programme (residential course) proposed by ENSV-FVI on the theme of crisis management, quality of veterinary services... with the possibility of using French scholarships delivered as a priority to the officials from these 4 countries;
- identify future paths of cooperation, such as the **setting up of reference laboratories** (ANSES) to support the government or support the development of other agri-food production sectors;
- to enable a **leverage effect towards other sources of funding** (subsidies, loans) from development banks (notably the AFD) and collaboration with livestock development projects (World Bank, Asian Development Bank, etc.). The technical and financial partners of the area will be invited to the 3 seminars that will be held, especially the last one, to consider the follow-up of this program through other funding.

III. BUDGET

13. Estimated budget

See below and the annex attached

14. Cost-effectiveness

In the absence of vaccines, supranational organisations agree that the implementation of biosecurity measures on a global basis is now the only defence against the global spread of the disease. According to *ASEAN Briefings* (DG Treasury, France) published on 10 December 2020, the Vietnamese government has spent nearly US\$1bn on pandemic and disaster response. US\$774.7 million was allocated to help fight Covid-19 and support people affected by the pandemic, according to the Ministry of Finance, while **US\$196.5 million was distributed to help mitigate the effects of natural disasters, floods and African swine fever.**

More broadly, it is noteworthy that some 75% of emerging infectious diseases come from animals and most of them are driven by human activities and their impact on the environment, especially in Southeast Asia.

To the World Bank, estimates from the avian flu crisis and the fight against antimicrobial resistance make a compelling case for investing in prevention, with returns on investment in the range of 44% to 88%, which is well above the returns available on nearly all other public spending and in private capital markets. **Recent estimates of prevention costs, including the monitoring and prevention of disease spillover driven by the loss and fragmentation of tropical forests and the wildlife trade, range between \$18 billion and \$27 billion per year over 10 years.**

Thus, it is possible to argue that the cost of inaction is greater than the cost of preventing the disease. This is indeed the case for most endemic animal diseases. Understanding emerging infectious diseases at the animal source and preventing them is the most effective & economical way to protect humans.

IV. PROJECT IMPLEMENTATION & MANAGEMENT

15. Implementing organization

ENSV-FVI is the implementing organization of the project (see [examples](#) of implemented projects).

Over the last 5 years, the ENSV-FVI has participated in or led 28 cooperation projects throughout the world, particularly in Africa (32%), in the Mediterranean neighbourhood (25%) and in the Eastern European neighbourhood (17%).

These projects are mainly funded by the European Union (technical assistance or twinning), but also by the World Bank, the partner countries in bilateral cooperation, the MEAE or the AFD. They range from several thousand euros to a maximum of 2 million euros.

The three themes that are at the core of the greatest number of cooperations are: alignment with EU rules on food safety, capacity building of laboratories and crisis management in animal health. In particular, ENSV-FVI has provided the expertise of its 18 members to health authorities in Asia within the framework of the European programs *Better Training for Safer Food* (BTSF World), in order to strengthen the control of avian influenza or to improve the understanding of EU requirements for food imports.

Out of 28 projects, 5 were specifically related to animal disease control programs (Northern Cyprus, Lebanon, Serbia, Turkey and Azerbaijan).

ENSV-FVI federates, coordinates and promotes French expertise, both public and private, in all areas of veterinary public health at international level. ENSV-FVI thus has the necessary experience in project engineering, for the construction, implementation and monitoring of institutional cooperation projects (European twinning, technical assistance, bilateral cooperation of the Ministry of Agriculture, etc.). To do this, it relies on the expertise of its team and the 18 members of its International Commission (Ministry of Agriculture and its operators Anses, Infoma, CIRAD, the 4 French veterinary schools, as well as professional members and associations such as AVSF, Adilva, SIMV, SNGTV, GDS International, etc.).

ENSV-FVI also promotes initial, continuing and specialised training, and develops tools in the scientific and technical fields that it makes available to its partners in the framework of its international cooperation. Its partnerships enable it to mobilise more than 1,000 days of expertise each year, on about 30 different programmes (twinning, TAIEX, BTSF, etc.), in order to train the partners in cooperation projects.

ENSV-FVI's veterinary training and capacity-building activities aim to contribute to improving:

- the health and welfare of animals, the safety of products and foodstuffs produced from them, and reduce the transmission of diseases by controlling risks at the human-animal-environment interface,
- confidence between stakeholders and trading partners in cross-border trade in animals, animal products and foodstuffs (through transparency and good communication on the occurrence of epidemiologically relevant diseases).

16. Project management

The project will be proposed to be integrated in the GF-TADs for Asia and Pacific which would be the adequate tool to bring the regional dimension expected in this project. The GF-TAD will thus be part of the project management through regular information allowing a good coordination of the activities related to ASF in the region.

The project manager:

- participates and chairs the steering committees,
- leads the writing of progress reports every 6 months,
- guarantees the good progress of the project and the control of project risks,
- takes key decisions regarding the possible reorientation of project activities,
- motivates and unites the project stakeholders,
- promotes the project to the teams and partner ministries.

In the same format as the European twinning projects managed by the ENSV-FVI, the steering committee meetings (ZOOM to allow the participation of all and to reduce the costs of project management) will take place on a quarterly basis, and decisions will be taken on the basis of consensus, under the guidance of the project leader.

The technical coordinators of the ENSV-FVI and the IFIP:

- plan and prepare the steering committees with the project manager,
- write the agendas and minutes of the steering committees,
- plan precisely the activities to be implemented,
- select the most relevant experts for the different activities
- organize the activities to be carried out,

- monitor the execution of the tasks, keeping the project monitoring document up to date, which records all the activities carried out,
- establish or check the correct establishment of deliverables,
- report to the project leader and to the 4 technical coordinators of the partner countries on the progress of activities.

The technical coordinators of the partner ministries (if possible, the SPS enquiry points):

- participate in the adequacy of training provided to official veterinarians in their country by validating the proposed training plan and identifying the target audience concerned by the training;
 - coordinate the activities of the project by integrating the other competent ministries of their country in the field of trade of pork products (invitation to the 3 seminars, to the trainings possibly, possible participation in the e-cerise program of agents of other ministries if relevant),
 - facilitate IFIP's contacts with pig farms and operators so that the digital platform can be deployed; the role of the technical coordinators is key to advertise the availability of the digital trainings and encourage participation,
 - participate in the steering committees every quarter,
 - raise information within their chain of command,
 - make recommendations for their proper implementation in the field,
 - provide useful information on animal health legislation in their country,
- If these coordinators are not the SPS enquiry points, then the technical coordinators will provide them with information on the progress of the project.

The French agri-food affairs advisors (located in Singapore and Hanoi):

- coordinate the prioritisation of activities with the technical coordinators of the 4 partner countries,
- report to the technical coordinators of the 4 partner countries on the progress of the project,
- support the proper implementation of activities in the 4 partner countries (visas, logistical support...),
- promote the project within their embassies and to donors (AFD, EU, ABD...).

V. REPORTING, MONITORING & EVALUATION

17. Project reporting

In the launching phase of the project, the project leader, together with the technical coordinators of IFIP and ENSV-FVI, will discuss and cooperate intensively with the ministries of the partner countries in order to agree on the relevant priorities for the good implementation of the project.

The mid-term report (after one and a half years) will provide an assessment of the activities carried out and the prospects for finalizing the project over the next year and a half. It will be discussed at a high level before the mid-term valorization seminar. The final report will be presented after validation by the technical coordinators of the partner ministries during the official closing seminar of the project. The perspectives of work, outside of STDF funding, will also be presented. This is why **it will be advisable to invite the technical and financial partners of the zone to this seminar**, with the support of the agri-food affairs advisors.

18. Monitoring and evaluation, including performance indicators

Within the logical framework of the project, results are measured on the basis of follow-up indicators and impact indicators:

Follow-up indicators:

- Number of control and contingency plans implemented, updated and evaluated,
- Number of zonings implemented,
- Number of official veterinarians trained, number of pig farmers and pig operators trained,
- Number of SPS and biosecurity trainings organized in the field,
- Number of laboratory diagnoses on ASF and transboundary diseases.

Impact indicators:

- The number of ASF outbreaks in the 4 countries decreases in 5 years,
- The trade restrictions are reduced in the 4 countries after ASF is better controlled,
- ASF is progressively controlled in the 4 countries (eg number of WAHIS notifications),
- Number of SPS issues referred to the WTO relating to African Swine Fever and pork products,

-Swine producer groups are organized to carry out the biosecurity measures,
-The laboratory capacities for diagnosis, control and management of swine diseases are strengthened,
-The technical and financial partners express an interest for the project and its follow-up in ASEAN or elsewhere.¹⁵

19. Dissemination of the projects results

The dissemination of the projects results is key in this project, considering that all stakeholders must consider public awareness and education on ASF surveillance as a priority tool in order to enhance the reporting mechanism for early detection of ASF.

The ENSV-FVI undertakes to provide all the deliverables indicated in the logical framework to the partner authorities, so that they can use them for their own benefit and disseminate them within their chain of command. All the materials produced are made available to the partner ministries, which will be able to use them as they wish over time (hence the importance of educational materials produced in the languages of the partner countries).

The project will be regularly **promoted on the ENSV-FVI website (and via Vetagro Sup tweeter feed)**, in particular on the basis of photo reports and testimonies of learners benefiting from the training courses set up. The STDF will be able to relay these reports on its own website, as will the IFIP and the French embassies of the 4 countries concerned. This will allow the project to be widely publicized to other potential donors. The communication is done in an objective of valorization but also of sustainability of the project. This is why it is advisable to multiply the distribution channels and to include communication-related items in each steering committee agenda.

As the ASF crisis is having a lasting impact on all 10 ASEAN countries, the project can be considered a pilot project for the area, likely to interest new donors (AFD, EU, Asian Development Agency, etc.) as mentioned above. Implementation recommendations for scaling up to the whole ASEAN region will be proposed and made available at the closing seminar.

This project will be promoted to the **French Ministry of Foreign Affairs for integration into the France-ASEAN development partnership**, with whom the ENSV-FVI regularly dialogues as the MEAE is one of the members of the International Commission of the ENSV-FVI.

The achievements of the project will, finally, be regularly reported to GF-TAD Asia (under OIE and FAO guidance) as it intends to operationalize the GF-TAD recommendations to control ASF.

ATTACHMENTS

Appendix 1: Logical framework (see attached template)

Appendix 2: Work Plan (see attached template)

Appendix 3: Project Budget in Excel (see attached template)

Appendix 4: Letters of support from organizations that support the project request

Appendix 5: Written consent from an STDF partner that agrees to implement the project **OR** evidence of the technical and professional capacity of another organization proposed to implement the project.

Appendix 6: Terms of Reference for key staff involved in project implementation (see CVs)

¹⁵ <https://www.porcimag.com/technique/sante-hygiene/la-ppa-debarque-en-amerique>

APPENDIX 1: Logical Framework

	Project description	Measurable indicators/targets	Sources of verification	Assumptions and risks
Goal	Securing trade in pork and pork products in the context of the spread of ASF in 4 ASEAN countries (VN, LA, KH, PH).	The number of ASF outbreak in the 4 countries decreases in 5 years ASF is progressively controlled in the 4 countries Trade restrictions are reduced in the 4 countries after ASF is better controlled	Data from the veterinary services, Foreign trade figures for pork products from the 4 partner countries (intra ASEAN and GMS)	Involvement of national partner authorities and of all ministries involved in the trade of pork products Involvement of pork operators Ability to disseminate training of trainers to disseminate learning and best practices despite chains of command that are not always unique, legislation that may need to be revised, and inter-ministerial work that is often necessary. One of the assumptions lies in the fact that the indicator of increased export volumes of pork products in the region would not be a relevant indicator to establish that trade security based on applied SPS standards is effective (eg Thailand).
Immediate objective (purpose)	Improve implementation of biosecurity measures to control ASF across much of the value chain (official veterinarians, pork operators and laboratories)	Progress measured by number of control/contingency plans implemented, updated and evaluated Number of embargoes of pork products in the 4 countries concerned Number of illegal pork trade flows diverted Number of zoning implemented Number of WAHIS notifications of ASF by the 4 countries involved Analysis of the number of ASF outbreaks reported by partner authorities	Data from the veterinary services of the 4 partner countries, Animal health reports, Number of connections to the educational training platform (designed for the pig operators), Rate of development of structured pork producer organizations	Good dissemination of methods within the districts thanks to well-trained official veterinarians who are encouraged to spread good practices in the field to comply with SPS requirements, Single chain of command and sufficient resources allocated to the dissemination mission, Good dissemination of methods among pig operators and farmers, Teaching materials adapted to the specific contexts of partner countries (type of livestock, territorial veterinary network, organization of the sector, network of animal health analysis laboratories, etc.)
Expected results/outputs				

Output 1	Improved understanding of the SPS standards to be implemented by official veterinarians with regard to the prevalence of ASF (focus on surveillance, control, biosecurity measures, certification, etc.)	Number of policies, strategies and plans for progressive control of ASF	Analyses of the Veterinary Services 'plans to carry out surveillance complying with OIE standards (early detection, rapid response, diagnosis etc.)	Educational material adapted to the target audiences Establishment of trustworthy links between the experts and the partners (email exchanges, long-term support beyond the project...) structured within the framework of long-term bilateral cooperation (preferential scholarships for the countries concerned granted by the French ministry of agriculture within the framework of the residential courses relating to crisis management beyond the project's timeframe)
Output 2	Better competitiveness of pig operators and farmers (understanding and dissemination of the educational training platform modules dedicated to biosecurity, animal health, maternity, fattening)	Foreign trade figures for pork products in the region Swine producer groups are organized to carry out the biosecurity measures	Foreign trade figures	Acceptance of the change of practices by farmers and pig operators
Output 3	Improvement by central laboratories of diagnostic methods for the analysis of cross-border animal diseases, including ASF	Number of laboratory diagnoses on ASF and transboundary diseases	Labs data collected by veterinary services	The regional networks of epidemiology and laboratory are facilitated as well as the linkage between epidemiology and laboratory to enhance disease controls
Output 1: Develop the skills of official veterinarians in SPS and trade in a context of ASF prevalence				
Activity 1.1: Adaptation of French training content on SPS and trade for the 4 partner target audiences				
Sub-activity 1.1.1: Needs mapping based on a pilot project (AVSF CIRAD) implemented in Laos mid 2021	Mapping of capacity building needs in the pork value chain carried out in Laos, with analysis of the transpositions required for the other 3 countries	Reports of missions AVSF and CIRAD	Technical and financial report submitted to ENSV-FVI	Good progress of the project funded by ENSV-FVI, Regular and complete reports in order to serve as a basis for the constitution of the face-to-face training content

Sub-activity 1.1.2: Development of face-to-face training content (pedagogical engineering) and associated training plan in agreement with partner ministries / translation	Pedagogical engineering of ENSV-FVI and CIRAD (15 days. Activity in France) to create the most adapted face to face training of trainers of the 4 countries + establishment of a dissemination plan/ translation of support documents in the 4 languages + EN	Satisfaction rate of the technical coordinators of the 4 partner countries with the proposed module and the associated training plan (adaptation to needs, feasibility and impact criteria taken into account, proposal for tools to evaluate the skills acquired by the official veterinarians regarding OIE standards)	Evaluations of the satisfaction of the partner ministries and implementation of a follow-up of effectiveness indicators to analyse the impact of the expected learning outcomes of the training with regard to the challenges of ASF in these 4 countries and OIE standards	Appropriate identification of the pool of official veterinarians to be trained in order to disseminate their expertise to their colleagues in the central administration and even in the districts/ partner ministries (+ other ministries involved in trade, eg Ministry of Industrial and Commerce (MIC) in Lap PDR. Dialogue to build the content of the training as close as possible to the needs of the 4 countries (taking into account the specific expectations of each country)
Activity 1.2: Dissemination of training modules for the implementation and enforcement of SPS in trade (face-to-face trainings of trainers)				
Sub-activity 1.2.1: Training of official veterinarians in Vietnam	3 face-to-face trainings of trainers organized in Hanoi by 2 ENSV-FVI experts (2 days)	Satisfaction expressed by the trained agents, 15% of women trained per country, Follow-up of the good dissemination of the training in the field, Analysis of the knowledge acquired through the knowledge survey.	Satisfaction data and dissemination plans collected by the technical coordinators of the 4 partner ministries Analysis of survey results by trainers, results reported to the project manager	Appropriate choice of the VOs to be trained by the DAH (role in supervising the application of SPS standards, including biosecurity, and educational capacities to replicate the knowledge in the field) Availability given to these OV by the chain of command to follow the training. Capitalization on acquired skills.
Sub-activity 1.2.2 : Training of official veterinarians in Laos	3 face-to-face trainings of trainers organized in Phnom Penh by 2 ENSV-FVI experts (2 days)	Satisfaction expressed by the trained agents, 15% of women trained per country, Follow-up of the good dissemination of the training in the field, Analysis of the knowledge acquired through the knowledge survey.	Satisfaction data and dissemination plans collected by the technical coordinators of the 4 partner ministries Analysis of survey results by trainers, results reported to the project manager	Appropriate choice of the VOs to be trained by the DLF (role in supervising the application of SPS standards, including biosafety, and educational capacities to replicate the knowledge in the field) Availability given to these OV by the chain of command to follow the training. Capitalization on acquired skills.

Sub-activity 1.2.3 : Training of official veterinarians in Cambodia	3 face-to-face trainings of trainers organized in Ventiane by 2 ENSV-FVI experts (2 days)	Satisfaction expressed by the trained agents, 15% of women trained per country, Follow-up of the good dissemination of the training in the field, Analysis of the knowledge acquired through the knowledge survey.	Satisfaction data and dissemination plans collected by the technical coordinators of the 4 partner ministries Analysis of survey results by trainers, results reported to the project manager	Appropriate choice of the VOs to be trained by the GDAH (role in supervising the application of SPS standards, including biosafety, and educational capacities to replicate the knowledge in the field) Availability given to these OV by the chain of command to follow the training. Capitalization on acquired skills.
Sub-activity 1.2.4 : Training of official veterinarians in Philippines	3 face-to-face trainings of trainers organized in Manila by 2 ENSV-FVI experts (2 days)	Satisfaction expressed by the trained agents, 15% of women trained per country, Follow-up of the good dissemination of the training in the field, Analysis of the knowledge acquired through the knowledge survey.	Satisfaction data and dissemination plans collected by the technical coordinators of the 4 partner ministries Analysis of survey results by trainers, results reported to the project manager	Appropriate choice of the VOs to be trained by the DAR (role in supervising the application of SPS standards, including biosafety, and educational capacities to replicate the knowledge in the field) Availability given to these OV by the chain of command to follow the training. Capitalization on acquired skills.
Activity 1.3: Long-term sustainability of in situ training through a continue distance learning program				
Sub-activity 1.3.1: Integration of 3 official veterinarians per country in the e-cerise distance e-learning program during a year	e-CERISE (Online Continuing Education for veteRinary Services) diploma course: 12 modules that are also offered individually ("à la carte" modules: "health standards for international trade", "epidemiological surveillance", "prevention, control and eradication of animal diseases", etc.). Each of the modules is calibrated for a 3-day learning period per month (3 x 6 hours) with webinars and distance learning tools and tutoring by a pair of experts (veterinary teacher and official veterinarian).	360° evaluation: trainees evaluate the training and trainers evaluate their trainees' achievements. ENSV-FVI analysis from a social and human sciences perspective: what impact does the STDF training have on the change of practices of OV in the implementation of SPS measures? 20% of women participating in the e-cerise distance learning program	Data from partner ministries ENSV-FVI data Common and shared analysis of data during steering committees	Availability of official veterinarians from partner ministries to conduct distance e learning Good understanding of English (the modules are in English)

Output 2 : Develop the skills of farm managers and pig operators in strengthening the management of pig farms and the implementation of biosecurity measures				
Activity 2.1 : Mapping of needs for the design of modern pig farming modules and support to its implementation for the reinforcement of biosecurity measures in pig farming				
Sub-activity 2.1.1 : Experts' mission to Vietnam, assessment of the situation, collection of needs and creation of contextual digital teaching materials	Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Vietnamese farms. Setting up a digital database of teaching aids for the design of modules based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.	Diversity and number of farms visited/audited. Audit reports and number of major deviations impacting the proper implementation of hygiene and biosecurity measures. Definition of priority areas of progress for the prevention of ASF. Number of contextual teaching aids (library of photos, animations, illustrations, graphics and videos).	Audit reports. Action plan for priority areas of progress. Data bank of contextual teaching materials.	Involvement of national partner authorities and of all ministries involved in pork products trade Involvement of professional partners Relevance of the farms audited and involvement of the farmers for the audit visits and practical exercises in order to collect the right teaching materials
Sub-activity 2.1.2 : Experts' mission to Laos, assessment of the situation, collection of needs and creation of contextual digital teaching materials	Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Laotian farms. Setting up a digital database of teaching aids for the design of modules based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.	Diversity and number of farms visited/audited. Audit reports and number of major deviations impacting the proper implementation of hygiene and biosecurity measures. Definition of priority areas of progress for the prevention of ASF. Number of contextual teaching aids (library of photos, animations, illustrations, graphics and videos).	Audit reports. Action plan for priority areas of progress. Data bank of contextual teaching materials.	Involvement of national partner authorities and off ministries involved in pork products trade Involvement of professional partners Relevance of the farms audited and involvement of the farmers for the audit visits and practical exercises in order to collect the right teaching materials

<p>Sub-activity 2.1.3 : Experts' mission to Cambodia, assessment of the situation, collection of needs and creation of contextual digital teaching materials</p>	<p>Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Cambodian farms. Setting up a digital database of teaching aids for the design of modules based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.</p>	<p>Diversity and number of farms visited/audited. Audit reports and number of major deviations impacting the proper implementation of hygiene and biosecurity measures. Definition of priority areas of progress for the prevention of ASF. Number of contextual teaching aids (library of photos, animations, illustrations, graphics and videos).</p>	<p>Audit reports. Action plan for priority areas of progress. Data bank of contextual teaching materials.</p>	<p>Involvement of national partner authorities and of all ministries involved in pork products trade Involvement of professional partners Relevance of the farms audited and involvement of the farmers for the audit visits and practical exercises in order to collect the right teaching materials</p>
<p>Sub-activity 2.1.4: Experts' mission to Philippines, assessment of the situation, collection of needs and creation of contextual digital teaching materials</p>	<p>Audits/diagnosis of the technical level, of the coherence of the building chains, of the hygiene and biosecurity measures of Philippine farms. Setting up a digital database of teaching aids for the design of modules based on the situation in the field, the needs, the current level of knowledge and know-how in order to provide relevant answers and to teach practical know-how while ensuring a gradual rise in skills.</p>	<p>Diversity and number of farms visited/audited. Audit reports and number of major deviations impacting the proper implementation of hygiene and biosecurity measures. Definition of priority areas of progress for the prevention of ASF. Number of contextual teaching aids (library of photos, animations, illustrations, graphics and videos).</p>	<p>Audit reports. Action plan for priority areas of progress. Data bank of contextual teaching materials.</p>	<p>Involvement of national partner authorities and of all ministries involved in pork products trade Involvement of professional partners Relevance of the farms audited and involvement of the farmers for the audit visits and practical exercises in order to collect the right teaching materials</p>
<p>Activity 2.2: Design and adaptation of modern pig farming modules and support to its deployment to reinforce biosecurity measures in pig farming</p>				

<p>Sub-activity 2.2.1: development of the content of the e-learning modules (pedagogical engineering) and exchanges/validation/translation with local partners</p>	<p>Pedagogical engineering of IFIP (2 experts over 5 days. Activity in France) for the design of 5 e-learning modules on the management of breeding at the 4 physiological stages (maternity, verrateri-gestating, post-weaning, fattening) and of a transversal module on the implementation of good hygiene and biosecurity measures for the prevention of ASF Adaptation to the diversity of the situations of the 4 countries in a practical training logic + translation of the support documents in the concerned languages + EN</p>	<p>Satisfaction rate of technical coordinators and partners in the 4 countries with the pedagogical approach of the proposed modules and its impact on the prevention of ASF (adaptation to needs, criteria of priorities, contextual feasibility, evaluation of acquired skills)</p>	<p>Evaluation of the satisfaction of the technical coordinators and partners on the relevance of the pedagogical engineering with regard to the challenges of ASF in these 4 countries.</p>	<p>Identification of the most qualified technical coordinators and partners to be associated for the evaluation of the pedagogical relevance. Quality of exchanges and shared analyses to build the content of the e-learning modules as close as possible to the needs of the 4 countries with a good consideration of the specific expectations</p>
<p>Sub-activity 2.2.2: Design, adaptation and translation of swine management and biosecurity implementation modules in Vietnam</p>	<p>Design of pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way. Creation of self-assessment questionnaires of acquired knowledge. Translation of the modules.</p>	<p>Satisfaction rate of the VN technical coordinator in view of the proposed modules and the associated pedagogical content (adaptation to the needs, quality of the pedagogical supports, evaluation tools of the acquired skills).</p>	<p>Assessment of the VN technical coordinator's satisfaction with the relevance and quality of the design and content of the e-learning modules with respect to the local context and the challenges of ASF</p>	<p>Quality of exchanges and shared analyses to complete, improve and validate the content of the e-learning modules as close as possible to the needs of the local context with a good consideration of the specific expectations.</p>
<p>Sub-activity 2.2.3: Design, adaptation and translation of swine management and biosecurity implementation modules in Laos</p>	<p>Design of pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way. Creation of self-assessment questionnaires of acquired knowledge. Translation of the modules.</p>	<p>Satisfaction rate of the LA technical coordinator in view of the proposed modules and the associated pedagogical content (adaptation to the needs, quality of the pedagogical supports, evaluation tools of the acquired skills).</p>	<p>Assessment of the LA technical coordinator's satisfaction with the relevance and quality of the design and content of the e-learning modules with respect to the local context and the challenges of ASF</p>	<p>Quality of exchanges and shared analyses to complete, improve and validate the content of the e-learning modules as close as possible to the needs of the local context with a good consideration of the specific expectations.</p>

Sub-activity 2.2.4: Design, adaptation and translation of swine management and biosecurity implementation modules in Cambodia	Design of pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way. Creation of self-assessment questionnaires of acquired knowledge. Translation of the modules.	Satisfaction rate of the KH technical coordinator in view of the proposed modules and the associated pedagogical content (adaptation to the needs, quality of the pedagogical supports, evaluation tools of the acquired skills).	Assessment of the KH technical coordinator's satisfaction with the relevance and quality of the design and content of the e-learning modules with respect to the local context and the challenges of ASF	Quality of exchanges and shared analyses to complete, improve and validate the content of the e-learning modules as close as possible to the needs of the local context with a good consideration of the specific expectations.
Sub-activity 2.2.5: Design, adaptation and translation of swine management and biosecurity implementation modules in Philippines	Design of pedagogical content, graphic animations, virtual visits with integration of digital supports collected (photos, videos) to train oneself in a fun and interactive way. Creation of self-assessment questionnaires of acquired knowledge. Translation of the modules.	Satisfaction rate of the PH technical coordinator in view of the proposed modules and the associated pedagogical content (adaptation to the needs, quality of the pedagogical supports, evaluation tools of the acquired skills).	Assessment of the PH technical coordinator's satisfaction with the relevance and quality of the design and content of the e-learning modules with respect to the local context and the challenges of ASF	Quality of exchanges and shared analyses to complete, improve and validate the content of the e-learning modules as close as possible to the needs of the local context with a good consideration of the specific expectations.
Activity 2.3: Dissemination and face-to-face training in modern pig farming modules and support for its implementation to strengthen biosecurity measures in pig farming				
Sub-activity 2.3.1: Implementation of e-learning modules: hosting on an LMS platform, training of professionals and future trainers to the modules of pig farming and implementation of biosecurity measures in the 4 partner countries	Hosting of the e-learning modules on a server with the possibility of an LMS platform Creation of a dissemination plan based on the established mapping/action plan Organization of training workshops for professionals Organization of training sessions for trainers with professional organizations in charge of distributing the tool to their members	Number of training courses organized Number of learners connected to the e-learning server Number of learners having completed all modules on the LMS platform	Data from partner ministries provided by the project's technical coordinators Review of progress at steering committee meetings	Relay provided by the professional organizations of the pig sector Encouragement by the health authorities, in a public/private partnership logic Training adapted to the sector Availability of the actors of the sector and willingness to integrate the system
Output 3: Develop the skills of central animal health laboratories for better identification of ASF and other transboundary animal diseases				
Activity 3.1: Identification of capacity building needs of central animal health laboratories				

Sub-activity 3.1.1: Mapping needs to adapt technical support and capacity building for central analysis laboratories (animal health)	1 mission of 2 experts over 2 days to central laboratories in the 4 countries	Identification of the technical support needed by laboratories in the 4 countries for priority animal transboundary diseases (including ASF)	Report of the mission with action plan	Availability and cooperation of analytical laboratories in partner countries
Activity 3.2: technical and operational support for central laboratories, face-to-face training of laboratory operators and professionals related to laboratory activities				
Sub-activity 3.2.1: Training central laboratory staff in animal health	1 face-to-face training session for the operators of the central laboratories of the 4 countries/ 2 experts over 2 days	Organization of training sessions according to the transboundary animal diseases identified as priorities (including ASF) 15% of women trained	Number of staff trained and able to deploy the training	Availability of analytical laboratories in partner countries Ability to expand in-house training Availability of diagnostic equipment

APPENDIX 2: Work Plan

Activities	Responsability	Year 1				Year 2				Year 3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
Project governance - Internal and external communication													
Project management and coordination on line meetings	Project team	X			X			X			X		
Logistical support: organization of experts' missions, support for seminars for 36 months	Project team	X	X	X	X	X	X	X	X	X	X	X	X
Promotion of the project (articles in the local press) and organization of promotion seminars	Project team		X					X					X
Final external evaluation project	Project team												X
Output 1 : Develop the skills of official veterinarians in SPS and trade in a context of ASF prevalence													
Activity 1.1: Adaptation of French training content on SPS and trade for the 4 partner target audiences													
Sub-activity 1.1.1 :Needs mapping based on a pilot project (AVSF CIRAD) implemented in Laos mid 2021	ENSV-FVI	X											
Sub-activity 1.1.2 :Development of face-to-face training content (pedagogical engineering) and associated training plan in agreement with partner ministries (exchanges) / translation	ENSV-FVI/CIRAD		X										
Activity 1.2: Dissemination of training modules for the implementation and enforcement of SPS in trade (face-to-face training)													
Sub-activity 1.2.1 : Training of official veterinarians in Vietnam	ENSV-FVI			X				X				X	
Sub-activity 1.2.2 : Training of official veterinarians in Laos	ENSV-FVI			X				X				X	

Sub-activity 1.2.3 : Training of official veterinarians in Cambodia	ENSV-FVI			X				X				X	
Sub-activity 1.2.4 : Training of official veterinarians in Philippines	ENSV-FVI			X				X				X	
Activity 1.3: Long-term sustainability of in situ training through a continue distance learning program													
Sub-activity 1.3.1 : Integration of 3 official veterinarians per country in the e-cerise distance learning program	ENSV-FVI					X	X	X	X				
Output 2:Develop the skills of farm managers and pig operators in strengthening the management of pig farms and the implementation of biosecurity measures													
Activity 2.1 : Mapping of needs for the design of modern pig farming modules and support to its implementation for the reinforcement of biosecurity measures in pig farming													
Sub-activity 2.1.1 : Experts' mission to Vietnam, assessment of the situation, collection of needs and creation of contextual digital teaching materials	IFIP	X	X										
Sub-activity 2.1.2 : Experts' mission to Laos, assessment of the situation, collection of needs and creation of contextual digital teaching materials	IFIP	X	X										
Sub-activity 2.1.3 : Experts' mission to Cambodia, assessment of the situation, collection of needs and creation of contextual digital teaching materials	IFIP	X	X										
Sub-activity 2.1.4: Experts' mission to Philippines, assessment of the situation, collection of needs and creation of contextual digital teaching materials	IFIP	X	X										
Activity 2.2:Design and adaptation of modern pig farming modules and support to its deployment to reinforce biosecurity measures in pig farming													

Sub-activity 2.2.1: development of the content of the e-learning modules (pedagogical engineering) and exchanges/validation/translation with local partners	IFIP			X									
Sub-activity 2.2.2: Design, adaptation and translation of swine management and biosecurity implementation modules in Vietnam	IFIP				X	X							
Sub-activity 2.2.3: Design, adaptation and translation of swine management and biosecurity implementation modules in Laos	IFIP					X	X						
Sub-activity 2.2.4: Design, adaptation and translation of swine management and biosecurity implementation modules in Cambodia	IFIP				X	X							
Sub-activity 2.2.5: Design, adaptation and translation of swine management and biosecurity implementation modules in Philippines	IFIP					X	X						
Activity 2.3: Dissemination and face-to-face training in modern pig farming modules and support for its implementation to strengthen biosecurity measures in pig farming													
Sub-activity 2.3.1: Implementation of e-learning modules: hosting on an LMS platform, training of professionals and future trainers to the modules of pig farming and implementation of biosecurity measures in the 4 partner countries	IFIP							X	X	X	X	X	X
Output 3: Develop the skills of central animal health laboratories for better identification of ASF and other transboundary animal diseases													
Activity 3.1: Identification of capacity building needs of central animal health laboratories													

Sub-activity 3.1.1: Mapping needs to adapt technical support and capacity building for central analysis laboratories (animal health)	experts ENSV-FVI (ADILVA)			X									
Activity 3.2: Technical and operational support for central laboratories, face-to-face training of laboratory operators and professionals related to laboratory activities													
Sub-activity 3.2.1: Train central laboratory staff in animal health	experts ENSV-FVI (ADILVA)				X		X			X			X

APPENDIX 3: BUDGET

Activities	Sub-activities	Cost description	Costs/ US \$			TOTAL
			STDF (US dollars)	In kind contribution	Other (cofunding)	
Output 1 total amount			279976	59400	9520	348896
Develop the skills of official veterinarians in SPS and trade in a context of ASF prevalence						
Activity 1.1: Adaptation of French training content on SPS and trade for the 4 partner target audiences	1.1.1 Needs mapping based on a pilot project (AVSF CIRAD) implemented in Laos mid 2021	Pilot project cofunded by International Commission ENSV-FVI			9520	
	1.1.2 Development of face-to-face training content (pedagogical engineering) and associated training plan in agreement with partner ministries (exchanges) / translation	15 consultancy days in France (unit cost activity in France: \$536)	8040			
		Translation documents 4 languages + English (in-house)	11900			
		Digital development	5000			
Activity 1.2: Dissemination of training modules for the	1.2.1 : Training of official veterinarians in Vietnam	3 missions 2 days 2 experts : 12 consulting days (ENSV-FVI cost)	9996			
		6 travels FR-VN (1 travel: \$1190)	7140			
		18 DSA	3114			

implementation and enforcement of SPS in trade (face-to-face training)		Staff time 50 vets + 1 days transportation/total 9 days		2250		
		Use of premises 6 days training		6000		
		Accommodation and meals 6 days trainings (1 day : \$30)	9000			
		USB keys, training materials ...		6000		
		Interpretation 6 days (1 day: \$100)	600			
	1.2.2 : Training of official veterinarians in Laos	3 missions 2 days 2 experts : 12 consulting days (ENSV-FVI cost)	9996			
		6 travels FR-LA (1 travel: \$1190)	7140			
		18 DSA	3366			
		Staff time 50 vets + 1 days transportation/total 9 days		2250		
		Use of premises 6 days training		6000		
		Accommodation and meals 6 days trainings (1 day : \$30)	9000			
		USB keys, training materials ...		6000		
		Interpretation 6 days (1 day: \$100)	600			
	1.2.3 : Training of official veterinarians in Cambodia	3 missions 2 days 2 experts : 12 consulting days (ENSV-FVI cost)	9996			
		6 travels FR-KH (1 travel: \$1190)	7140			
		18 DSA	2556			
		Staff time 50 vets + 1 days transportation/total 9 days		2250		
		Use of premises 6 days training		6000		
		Accommodation and meals 6 days trainings (1 day : \$30)	9000			
		USB keys, training materials ...		6000		
		Interpretation 6 days (1 day: \$100)	600			
	1.2.4 : Training of official veterinarians in Philippines	3 missions 2 days 2 experts : 12 consulting days (ENSV-FVI cost)	9996			
		6 travels FR-PH (1 travel: \$1190)	7140			
		18 DSA	4824			
		Staff time 50 vets + 1 days transportation/total 9 days		2250		
		Use of premises 6 days training		6000		

		Accommodation and meals 6 days trainings (1 day : \$30)	9000			
		USB keys, training materials ...		6000		
		Interpretation 6 days (1 day: \$100)	600			
Activity 1.3: Long-term sustainability of the training through a continue distance e-learning program						
Activity 1.3: Long-term sustainability of the training through a continue distance e-learning program	1.3.1 :Integration of 2 official veterinarians per country in the e-learn distance learning program during 1 year	12 official veterinarians included in the e learning program	134232			
		E learning staff time total 90 days		2160		
		32 days face to face time in France		240		
Output 2 total amount			281240	6040		287280
Develop the skills of farm managers and pig operators in strengthening the management of pig farms and the implementation of biosecurity measures						
Activity 2.1: Mapping of needs for the design of modern pig farming modules and support to its implementation for the reinforcement of biosecurity measures in pig farming						
Activity 2.1: Mapping of needs for the design of modern pig farming modules and support to its implementation for the reinforcement of biosecurity measures in pig farming	2.1.1 : Experts' mission to Vietnam, assessment of the situation, collection of needs and creation of contextual digital teaching materials	1 mission 6 days 2 experts : 12 consultancy days (IFIP cost)	13920			
		2 travels FR-VN (1 travel: \$1190)	2380			
		14 DSA	2422			
		6 days 10 pig operators'time		1200		
	2.1.2 : Experts' mission to Laos, assessment of the situation, collection of needs and creation of contextual digital teaching materials	1 mission 6 days 2 experts : 12 consultancy days (IFIP cost)	13920			
		2 travels FR-LA (1 travel: \$1190)	2380			
		14 DSA	2618			
		6 days 10 pig operators'time		1200		
	2.1.3 : Experts' mission to Cambodia, assessment of the situation, collection of needs and creation of contextual digital teaching materials	1 mission 6 days 2 experts : 12 consultancy days (IFIP cost)	13920			
		2 travels FR-KH (1 travel: \$1190)	2380			
		14 DSA	1988			
		6 days 10 pig operators'time		1200		
	2.1.4: Experts' mission to Philippines, assessment of the situation, collection of needs and	1 mission 6 days 2 experts : 12 consultancy days (IFIP cost)	13920			
2 travels FR-PH (1 travel: \$1190)		2380				
14 DSA		3752				

	creation of contextual digital teaching materials	6 days 10 pig operators'time		1200		
Activity 2.2: Design and adaptation of modern pig farming modules and support to its deployment to reinforce biosecurity measures in pig farming	2.2.1: development of the content of the e-learning modules (pedagogical engineering) and exchanges/validation/translation with local partners	30 consultancy days (IFIP cost)	34800			
		Fixed price for translation of contents in 4 languages + English (in-house) 10000 euros	11900			
	2.2.2: Design, adaptation and translation of swine management and biosecurity implementation modules in Vietnam	15 consultancy days (IFIP cost)	17400			
		Fixed price for proofreading/translation of digital materials + English (in-house) 2500 euros	2975			
	2.2.3: Design, adaptation and translation of swine management and biosecurity implementation modules in Laos	15 consultancy days (IFIP cost)	17400			
		Fixed price for proofreading/translation of digital materials + English (in-house) 2500 euros	2975			
	2.2.4: Design, adaptation and translation of swine management and biosecurity implementation modules in Cambodia	15 consultancy days (IFIP cost)	17400			
		Fixed price for proofreading/translation of digital materials + English (in-house) 2500 euros	2975			
	2.2.5: Design, adaptation and translation of swine management and biosecurity implementation modules in Philippines	15 consultancy days (IFIP cost)	17400			
		Fixed price for proofreading/translation of digital materials + English (in-house) 2500 euros	2975			
Activity 2.3: Dissemination and face-to-face training in modern pig farming modules and support for its implementation to strengthen	2.3.1: Implementation of e-learning modules: hosting on an LMS platform, training of professionals and future trainers to the modules of pig farming and implementation of biosecurity measures in the 4 partner countries	4 missions 5 days 2 experts : 40 consultancy days (IFIP cost)	46400			
		8 travels (1 travel: \$1190)	9520			
		12 DSA VN	2076			
		12 DSA LA	2244			
		12 DSA KH	1704			
		12 DSA PH	3216			
		Pig operator's staff time		1240		

biosecurity measures in pig farming		Fixed price 10000 euros server hosting/4 trainer-learner connection interfaces (If LMS platform, budget according to number of learner connections envisaged)	11900			
Output 3 total amount			70552	4000		74552
Develop the skills of central animal health laboratories for better identification of ASF and other transboundary animal diseases						
Activity 3.1 : Identification of capacity building needs of central animal health laboratories	3.1.1 : Mapping needs to adapt technical support and capacity building for central analysis laboratories (animal health)	8 missions 2 days 2 experts : 16 consultancy days (senior ENSV-FVI cost)	17136			
		8 travels (1 travel: \$1190)	9520			
		6 DSA VN	1038			
		6 DSA LA	1122			
		6 DSA KH	852			
		6 DSA PH	1608			
		10 lab staffs days mobilized in each central lab		1600		
Activity 3.2 : Technical and operational support for central laboratories, face-to-face training of laboratory operators and professionals related to laboratory activities	3.2.1: Training central laboratory staff in animal health (+purchase of laboratory equipment if needed for diagnoses)	8 missions 2 days 2 experts : 16 consultancy days (senior ENSV-FVI cost)	17136			
		8 travels (1 travel: \$1190)	9520			
		6 DSA VN	1038			
		6 DSA LA	1122			
		6 DSA KH	852			
		6 DSA PH	1608			
		Small lab diagnostic equipments	8000			
		30 lab staffs days mobilized per country during 16 days		2400		
Project management total amount			179204	30240		209444
Project governance -	Project management and coordination on line meetings	Project manager costs: 4 on line committees /536 \$ per committee	2144			

Internal and external communication		1/2 FTE (full time employment) 4 technical coordinators (partner ministries) over the 3 years of the project + 1/2 FTE 4 assistants		30240		
	Logistical support	1/2 FTE French assistant in ENSV-FVI for the organization of expert missions over 36 months Annual average wage of \$47600	71400			
	Promotion of the project and organization of promotion seminars	10 articles in local press (\$595 each)	5950			
		Travel costs 3 coordinators 3 seminars	9000			
		Location hotel rooms (one location : \$3570) 6 days seminars	21420			
		DSA (average DSA \$193) 3 missions 3 days 3 persons	5211			
		Interpretation 6 days seminars 4 languages each (cost/day: \$100)	2400			
		Accommodation and meals 300 people for 3 seminars	30000			
		Venue 300 persons during 6 days		9000		
	Final external evaluation project	Average price	11900			
Miscellaneous expenses (2.5% of STDF total contribution)	Total STDF contribution of \$791 193	19779				
Total amount activities			810972,00	99680	9520	920172
Management costs ENSV-FVI 11%			89206,92			
Total PG			900 179	99 680	9520	1 009 379

