

Biosecurity in pig production

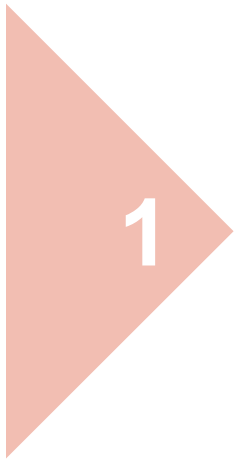
to control African Swine Fever



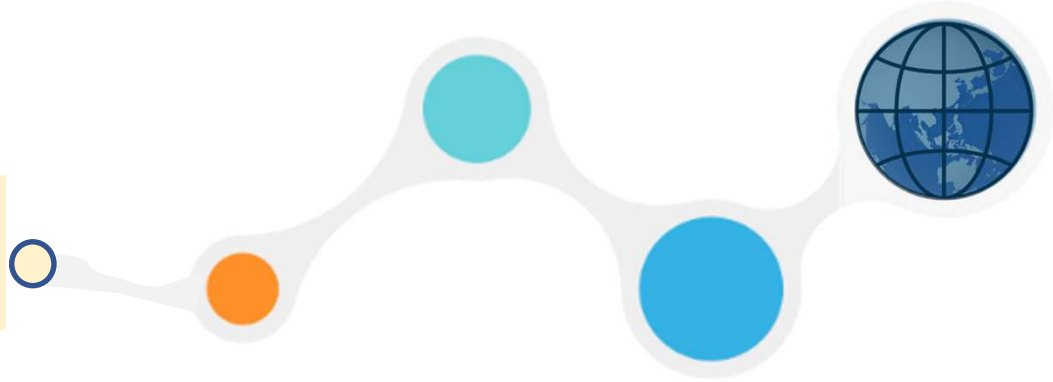
BIG program : activities that build on each other



Prior activities



Exploratory missions + study visit



Exploratory missions (2022)



Attendance to October 2022's Residential Course in France "Leadership in Veterinary Services"



<https://ensv-fvi.fr/flashback-to-the-2022-ensv-fvi-residential-course-leadership-in-veterinary-services-october-2022/>



Studies, on-field surveys



2



Studies, on-field surveys

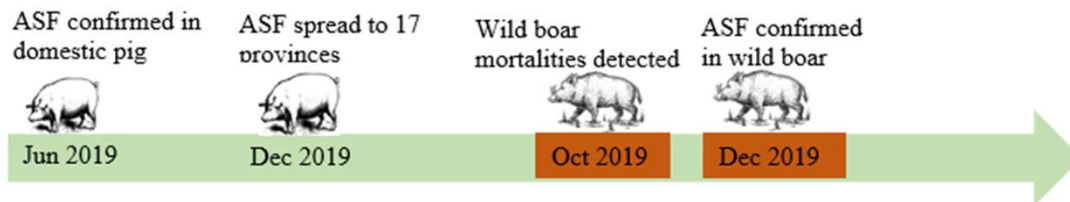




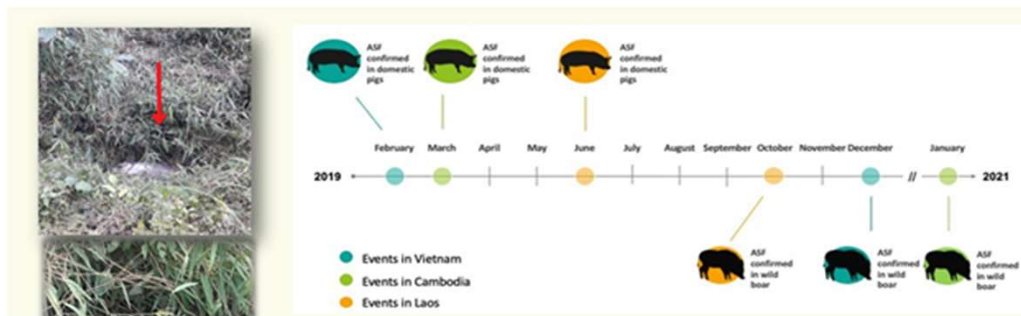
Cirad surveys



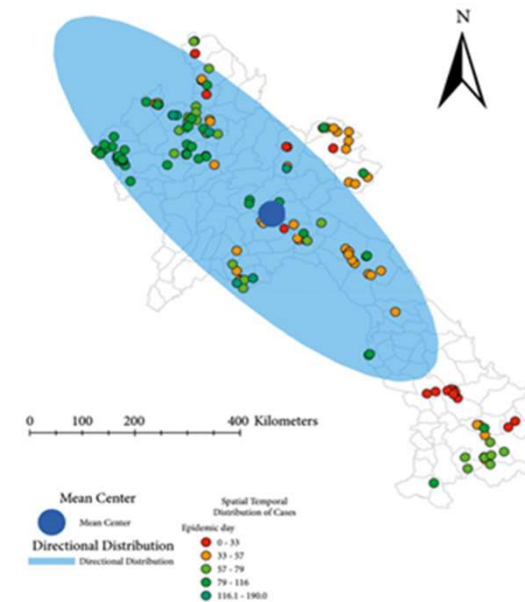
SCOPING REVIEW RESULTS (1): Chronological event of ASF outbreak (exemple in Laos)



Timeline of ASF outbreak in Lao PDR



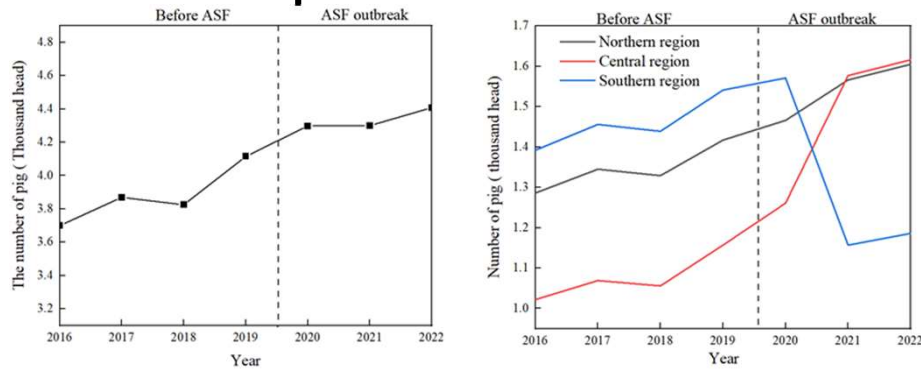
Timeline of ASF detection in wild pigs (Cadenas-Fernández et al., 2022).



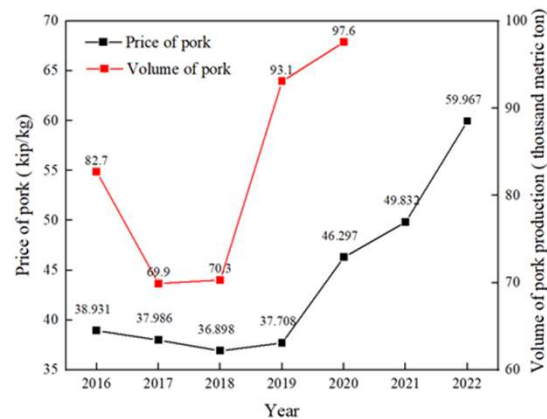
Map of ASF outbreak situation (Source: Hui et al., 2023)



SCOPING REVIEW RESULTS (2): Impacts of ASF to pig production (exemple in Laos)



The number of pigs and pigs by region (Source: Lao Statistics Bureau, 2023)



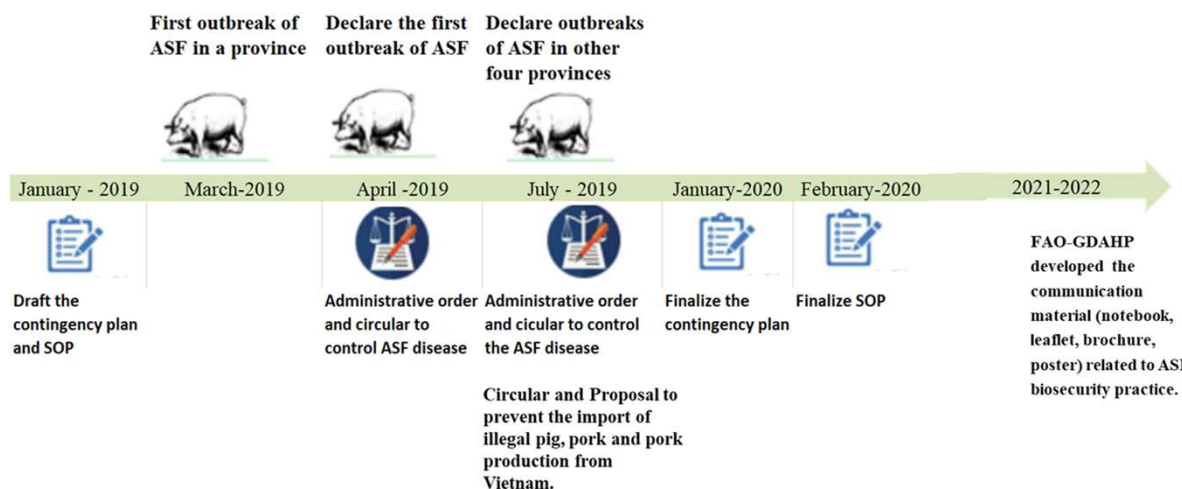
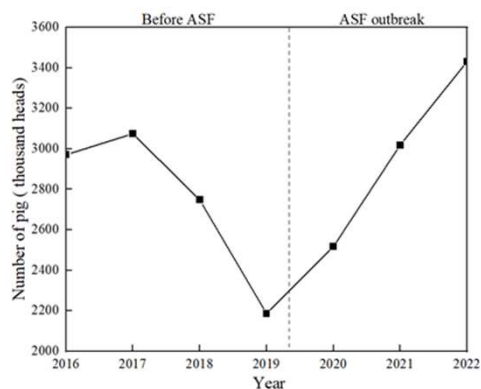
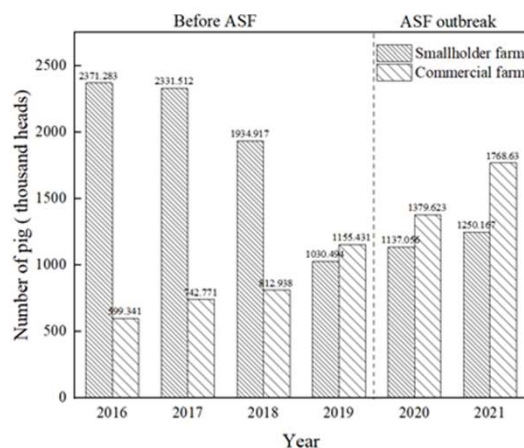
The price and volume of pork (Source: Lao Statistics Bureau, 2023; MAF, 2023)

Impacts of ASF to the pig production:

- Risk of food and nutritional crisis
- Risk of economic and social crisis
- Ecological and health risks
- Risk of disappearance of local pig value chains



SCOPING REVIEW RESULTS (1): Chronological events of ASF in Cambodia



- Significant drop in pig production in 2019, with backyard farmers suffering significant losses and value chains affected.
- 2.52 million heads of pigs in 2020 and 3.24 million in 2021.
- Domestic swine population saw a substantial rebound in 2021, reached levels comparable to pre-ASF outbreak levels.



SCOPING REVIEW RESULTS (2): Challenges in Cambodia

Farmer cooperation with authorities

- A lack of trust and connection between swine farmers and local authorities
- Fear of animal culling discourages farmers and VAHWs from reporting disease.
- The delays in implementing control measures such as sampling, culling, and disinfection.

Awareness and Knowledge:

- Limited awareness regarding ASF transmission routes and optimal biosecurity practices among household farmers.
- Small-scale farms face high mortality rate due to poor biosecurity practices

Enforcement / policy:

- Failure to practice effective biosecurity measures resulted in an increased risk of disease outbreaks on commercial and household farms.
- The sale of pigs by farmers to middlemen or traders who travel between different farms contributes to the spread of ASF.
- The intra-provincial transportation control was not applied to middlemen.
- No compensation policy encourages farmers to walk sick animals out of the red zone for sale to middlemen.

Wild Pig Interface:

- Cambodia's dense forests harbor wild boar populations, potential ASF reservoirs.





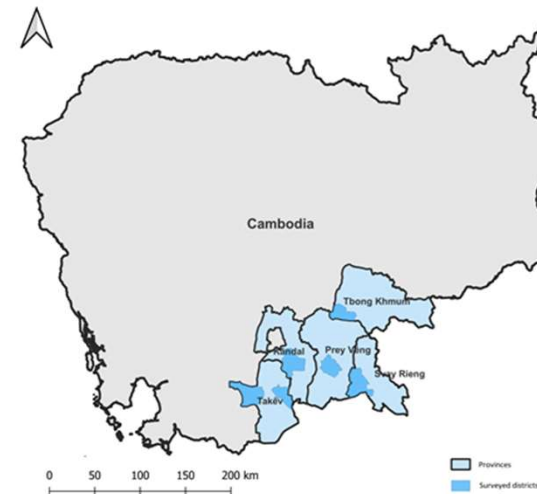
AVSF surveys



Main outcomes of AVSF studies and surveys (1)



1- Prevalence / incidence survey



ASF case definition: affecting pigs of all ages with sudden death and high mortality rates at farm and community level

Estimated prevalence: 0,22 to 85 % in Lao PDR (23,13 average) and 10 to 40 % in Cambodia



Main outcomes of AVSF studies and surveys (2)



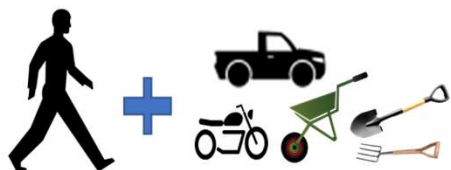
2- K.A.P. (N= 285 / 131)



Important for:

32%

34%



Not important for:

82%

44%

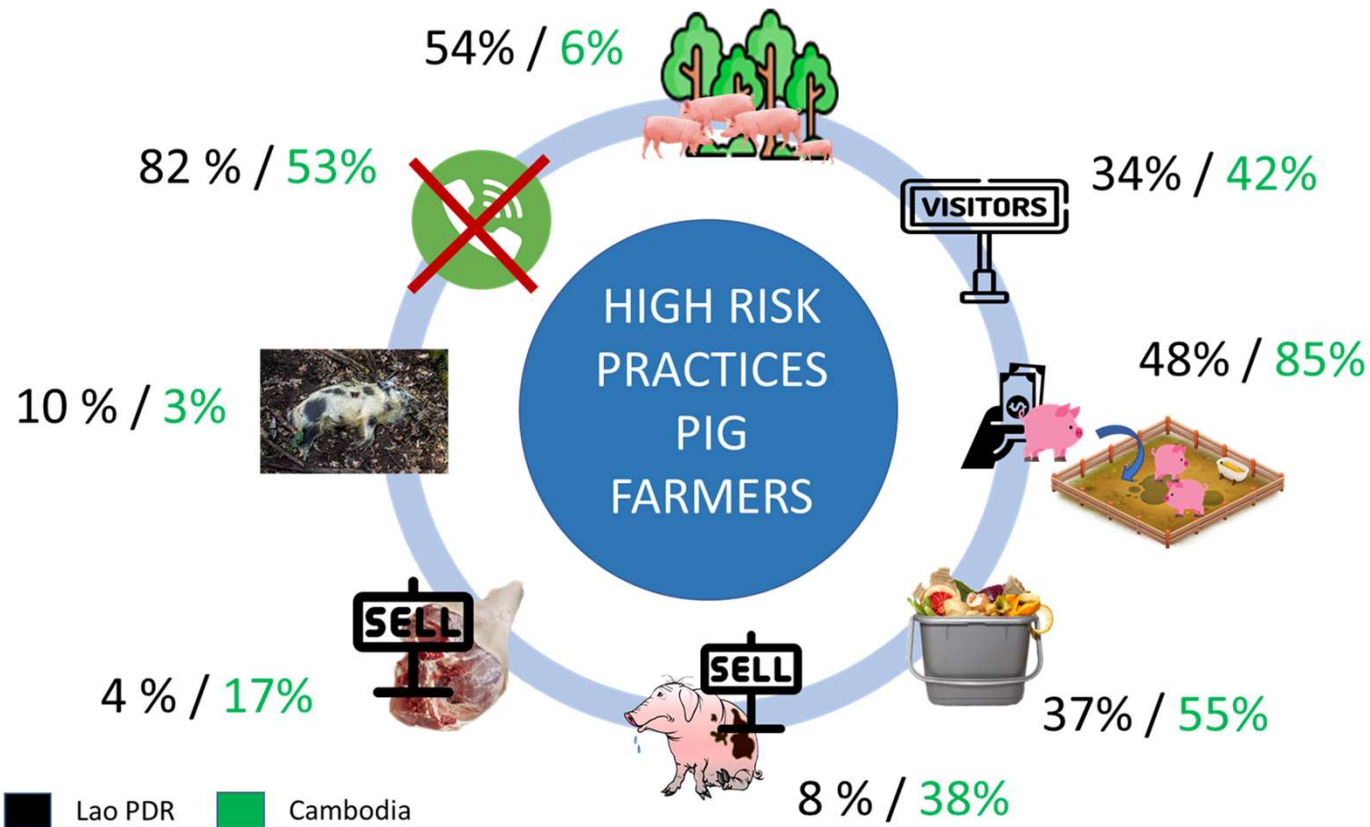


Efficient against ASF for: 44%

50%



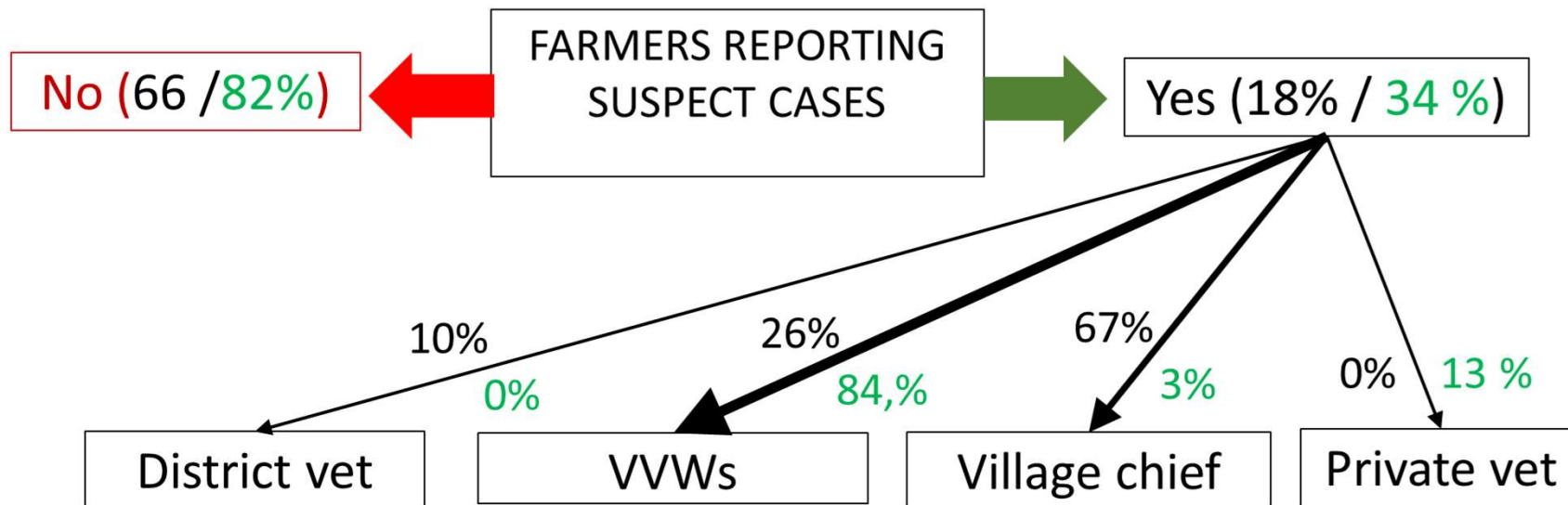
Main outcomes of AVSF studies and surveys (3)



Main outcomes of AVSF studies and surveys (4)



3- Case study (N= 164 / 133)



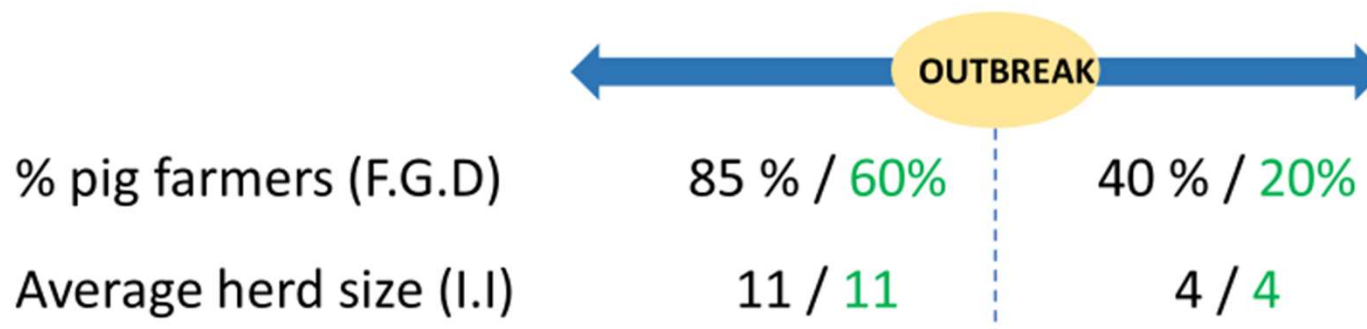
Outbreak resolution: 60 days to 1 year



Main outcomes of AVSF studies and surveys (5)



Outbreak impact on pig farming activities



Percentage of farmers affected	Pigs		
	% of death	% who recovered	% non affected
99% / 86%	90 % / 85 %	4% / 2%	6% / 9%

6



— Main outcomes of AVSF studies and surveys (6)



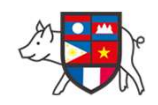
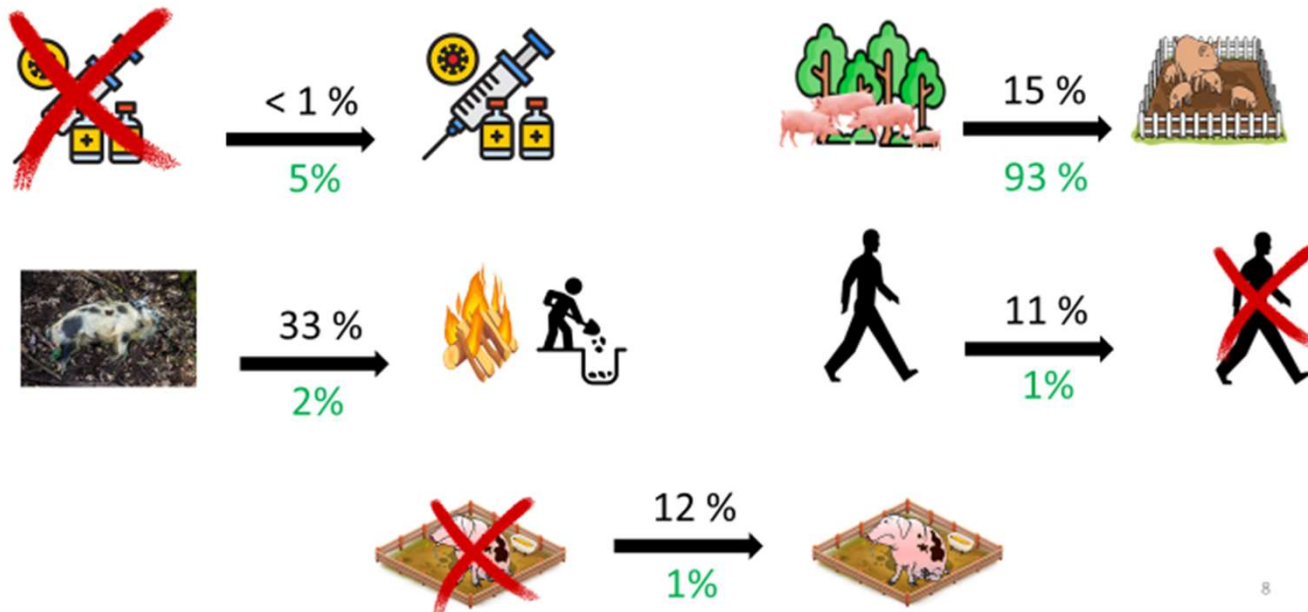
Outbreak impact on H.H. livelihoods (I.I.)	Laos	Cambodia
Loss of income	1	1
Increased pig prices	2	
Less pigs locally	3	
Stopped raising pigs		2
More difficult to sell pigs		3

Outbreak impact on communitie (FGD)	Laos	Cambodia
Affected traditional ceremonies / weddings	67%	
Loss of income	46%	78%
Lower consumption of meat in diet	42%	19%
Increased number of families falling in poverty and to be assisted	29%	74%



Main outcomes of AVSF studies and surveys (7)

Positive practice changes for most recommended measures





Co-construction
workshops,
action plans

ifip —
Institut du porc

 **cirad**



 **AVSF**
AGRONOMES & VÉTÉRINAIRES
SANS FRONTIÈRES



3



First workshop held in Manila on June 2023, concentrating on biosecurity in farms audits and controls.



Chapter / Item	Good (or Level 2)	Medium (or level 1)	Not assessed (or level 0)	Not Applic- able	mandatory biosecurity measures conventional farms	Integration of mandatory biosecurity measures backyard	Recommended biosecurity measures		Comments	Glossary
							Indoor conventional breeding	Backyard		
<i>example of points if you want to calculate a score</i>	10	5	0		Indoor conventional breeding	Backyard	Indoor conventional breeding	Backyard		
> the nearest conventional pig farm	>500 m		< 500 m							
disinfection in 2 or 3 areas ("dirty"/ "clean" or public / professional / breeding)	Yes	Partially	No							
is boundary of the professional area (grid, hedge, chain, talus...)	Yes		No							
is fencing around the professional area to prevent wild boar from passing	Yes	No, hermetic single block building with entry room	No							
is item (gate, chain...) to limit the entry of vehicles in the professional area	Yes	No, hermetic single block building with	No							



- French Experts animation
- Public-Private Partnership
- Stakeholder Participation: Exchange of Practices
- Outputs for next Training Courses



Second Workshop on biosecurity in Hanoi – October 2023

- In presence of Dr. Nguyen Van Long, CVO



- Cambodia working group :



- Lao working group :





Training activities

4



Trainings (e-learnings, R. course, face-to-face), restitutions



Cross visits in villages (smallholder farms)

ToT for PAFOs and DAFOs and VVWs training on biosecurity, pig disease, good usage of antimicrobials and sampling



District vet, commune chief, village chief, VAHW, pig farmers and traders) for 5 different village in 3 site for 3 provinces: 2 cross visit in Tboung Khmum province, 1 cross visit in Svay Rieng and 2 cross visit in Takeo province



IFIP training activities online



- 2 e-training modules:
 - training of trainers on external and internal biosecurity for private vet and technician
 - external biosecurity e-training/message for backyards

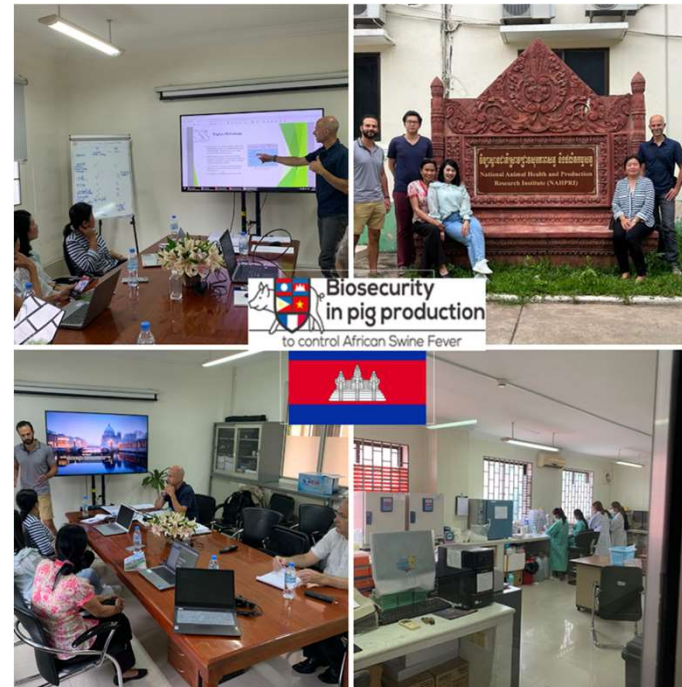
Link (soon available in 4 languages) :

https://www.big-program.com/trainings_and_tools



ENSV-FVI implemented mission on laboratories

- September 2023: Audit and training mission to Cambodia's central animal health laboratory
- The mission provided an opportunity to assess ASF diagnostic capabilities and propose actions or suggestions for cooperation.
- With participation of two laboratory personal from Lao PDR.
- Result : good level of laboratory equipments and procedures



Main outcome : more needs on raising awareness of how to manage suspicions on farms





E-CERISE
ONLINE CONTINUING EDUCATION FOR VETERINARY SERVICES

**INTERNET SCHOOL DIPLOMA
GOOD GOVERNANCE AND QUALITY
OF VETERINARY SERVICES**

Program

- Module 1: Discover the World Organization for Animal Health**
January 16 - January 29 2024
- Module 2: Risk analysis**
January 30 - March 15
- Module 3: Epidemiological surveillance**
March 18 - April 30
- Module 4: Sanitary standards for international trade**
May 1 - June 14
- Module 5: Disease prevention, control, and eradication**
June 17 - July 30
- Module 6: Emergency Risk Management**
September 2 - October 16
- Module 7: Veterinary products and antimicrobial resistance**
October 17 - November 29
- Module 8: Animal welfare**
December 2 - January 16 2025
- Module 9: Aquaculture: Production and risk analysis for aquaculture facilities**
January 17 - February 28 2025
- Module 10: Quality of Veterinary Services**
March 3 2025 - April 17 2025

QR code:  SCAN ME

École Nationale des Services Vétérinaires – France Vétérinaire International – VetAgro-Sup –
1, avenue Bourgelet – 69289 Marcy l’Étoile
International cooperation – e-Cerise (online Continuing Education of veterInary Services)
+ 33(0)4.78.87.66.46 training@vetagro-sup.fr

Logos: EnvA, Oniris, envt, VetAgro Sup, École Nationale des Services Vétérinaires, France Vétérinaire International

ENSV-FVI trainings :

- online trainings (e-CERISE)

- Residential Course (France) May 2024 on Biosecurity



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France Vétérinaire International



Focus on ENSV-FVI and IFIP face-to-face trainings

OBJECTIVES :

- Based on the studies and consultation workshops carried out as part of the BIG programme, the aim of this training course was to provide public and private stakeholders in the pig chain with the tools they need to disseminate good biosecurity practices on farms in order to prevent the spread of ASF.
- **The participants are expected to relay this training as a future trainers (FT) for their colleagues.**
- FT and Trainees will have a good knowledge of ASF transmission and prevention measures. They will be able to assess biosecurity management on a farm through several items regarding farming practices, depending on the type of farming (commercial farms, backyards). See § *pedagogical objectives* for details.



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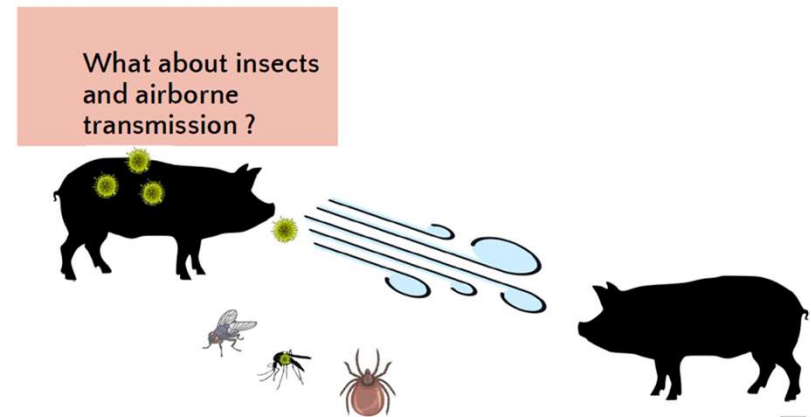
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Focus on ENSV-FVI and IFIP face-to-face trainings

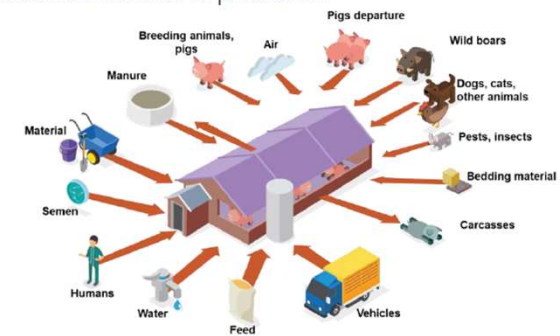
CONTENTS :

- **Part 1:** last updates by Competent Authority (ASF situation, national strategy)
- **Part 2:** Review of the implementation of biosecurity measures (based on Cirad and AVSF studies)
- **Part 3 (main course):** Main course on the assessment of biosecurity measures on a farm
- **Part 4 (in Vietnam):** Exercise on biosecurity assessment in connexion with Vietnamese Circular 24



External biosecurity

- Identify the entry vectors for infectious agents in farms and for each, propose some measures of protection



Focus on ENSV-FVI and IFIP face-to-face trainings

Figures (training of trainers)

- Vietnam (April 2024 – 2 sessions): **67 participants** from the Veterinary Services (DAH, RAHO and sub-DLPAH) who will be able to disseminate and deploy biosecurity audit and control tools in pig farming + 28 participants from the Universities, which will allow a possible dissemination of training contents in the framework of initial and continuous trainings
- In Philippines (17-18 October): **30 participants**, national and local public + College of swine practitioners
- In Lao PDR (21-22 October): **45 participants**, from public (18 provinces) and private sector
- In Cambodia (24-25 October): **49 participants** (also public and private)



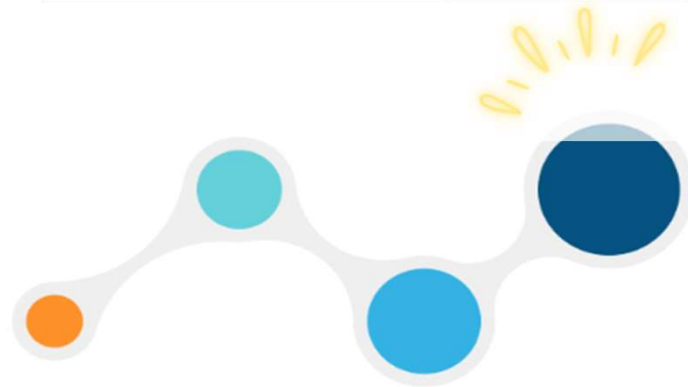
École Nationale des Services Vétérinaires

France Vétérinaire International





Appropriation / dissemination activities



ENSV-FVI collaboration with universities / training centers

- Previous cooperation existing with Nong Lam University (Ho Chi Minh)
- Exploratory mission with 2 Universities (*Training Unit Implementation*) in January 2024
- Implementation of trainings in Vietnam in May 2024 together with teachers from Vietnamese Universities (for vet students and vet inspectors), to help for dissemination of provided tools
- Organisation of the training in Philippines (October 2024) together with ITCPH (International training on Pig Husbandry)



Highlights

https://www.big-program.com



ໜ້າຫຼັກ

ເຫດການແລະການສົມມະນາ

ການສຶກສາແລະການສຳຫຼວດ

ການພັດທະນາ & ເຄື່ອງມື

1

BIG website for dissemination of BIG outputs

ຄວາມບອດໄພທາງຊີວະໃນການຜະລິດຫມູ

ກວດຄວບຄຸມ ໄຂ້ຫມູອາຟຣິກາ

ຜູ້ ຫຼື ເລືອກພາສາຂອງທ່ານຂ້າງລຸ່ມນີ້



ຄວາມບອດໄພ ທາງຊີວະ ໃນອຸດສາຫະກຳຫມູ

ໂຄງການຮ່ວມມືສາກົນນີ້ທີ່ນຳໂດຍຝຣັ່ງຫວັງປະຕິບັດມາດຕະການຄວາມບອດໄພທາງຊີວະໃຫ້ຄົ້ນເພື່ອຄວບຄຸມໄຂ້ຫມູອາຟຣິກາ (ASF) ໃນອາຊຽນຕາເວັນອອກໃຕ້ (ກຳປູເຈຍ, ລາວ, ພີລິບປິນ, ຫວຽດນາມ). ດຳເນີນການຕະຫຼອດສາມປີ, ໂຄງການນີ້ໄດ້ຖືກນຳໂດຍ ENSV-FVI / VetAgro Sup ເພື່ອການກະສິກຳ ແລະການຄຸ້ມຄອງອາຫານໃນນາມຂອງກະຊວງການເກັບຮັກສາພະແກ້ວງານອາຫານແລະອາຫານເຮັດໃຊ້, ໃນຄວາມຮ່ວມມືກັບ IFIP, CIRAD ແລະ AVSF, ຂອບໃຈການສະໜັບສະໜູນທາງການເງິນຈາກ



Highlights

1

2

Ending seminar : February 2025

- BIG program contribution
- Project impact assessment (to be continued in the longer term)

Appropriation,
dissemination





BIG program's approach

In line with SGE on ASF **recommandations**

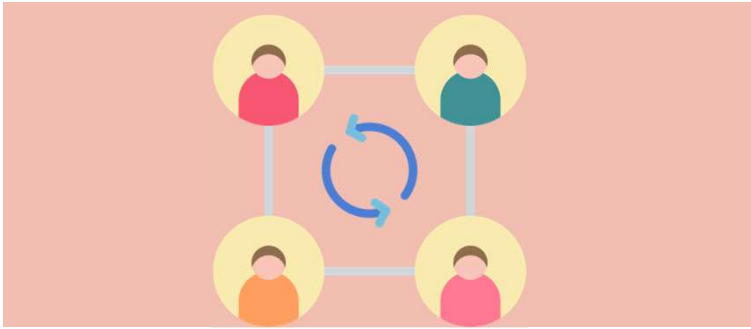


Standing Group of Experts-African Swine Fever (SGE-ASF) Meeting for the Asia-Pacific Region

Qingdao, China

27 – 28 July 2023





Cambodia working group with Dr S. Jayme (ECTAD
FAO)

AVSF restitution Seminar in Laos, in
presence of Dr Souphavanh Keovilay,
and Kinley Choden (WOAH)

Recommandation 1 : information sharing

Participation of FAO and WOAAH to BIG events :

- working groups and restitutions during BIG regional workshop (3 countries) on biosecurity in Hanoi (October 2023)
- restitutions of AVSF studies in Laos and Cambodia (January and March 2024)
- Cirad restitution last week in Vietnam (with WOAAH, FAO, ...)



Meeting with Chief Veterinary Officers

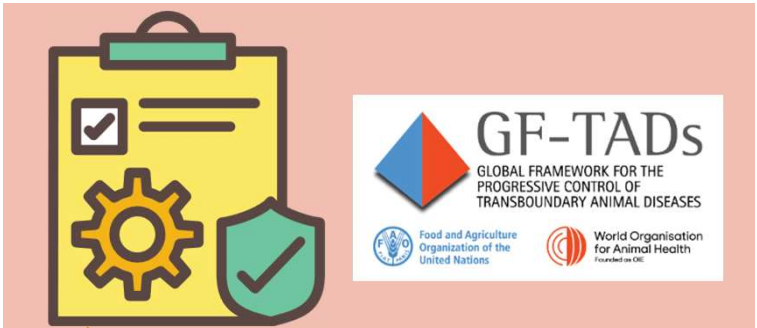


Field cross-visits (AVSF)



Project involving all stakeholders, from decision-makers at national level to smallholders





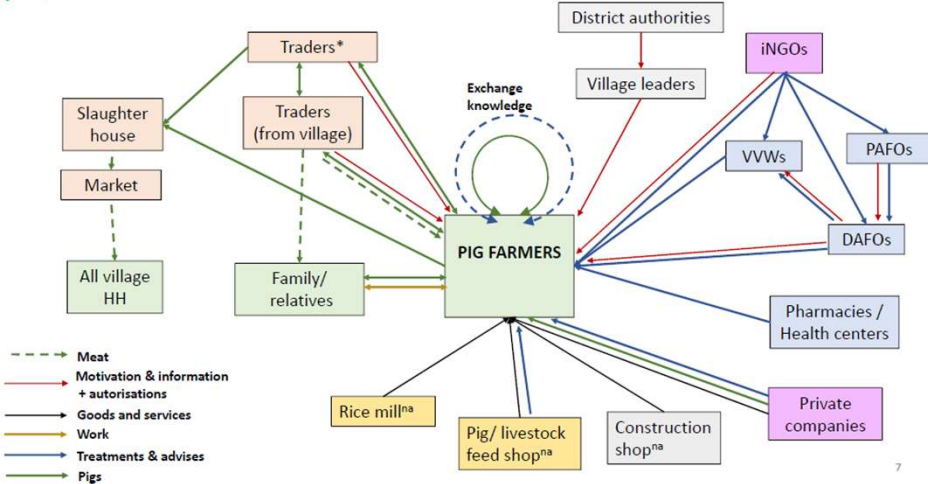
Recommandation 2 : surveillance and control measures

Strengthen the application of biosecurity, including the adoption of community-based biosecurity [...] and leverage on social and behavioural sciences [...] take into account the attitudes and practices of pig holders.



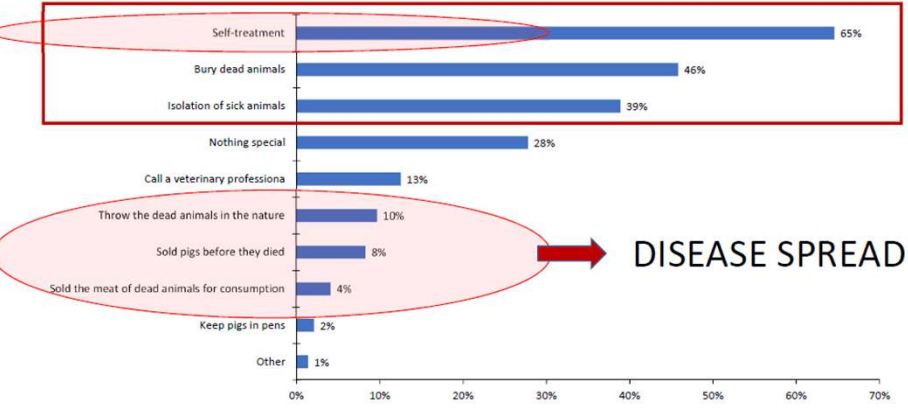
AVSF surveys on Knowledge, Attitudes and Practices a community level

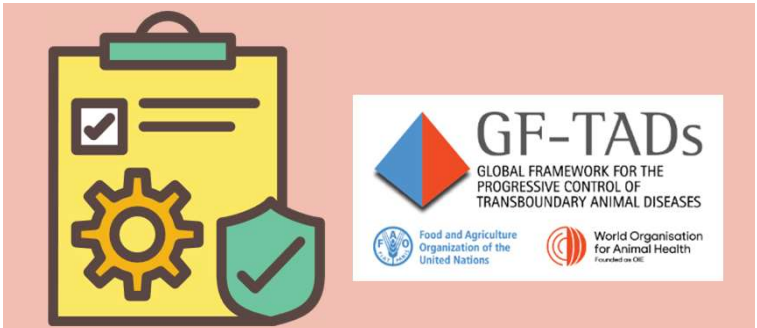
AVSF Actors of the pig sector at community level



AVSF

Practices when the pigs get sick

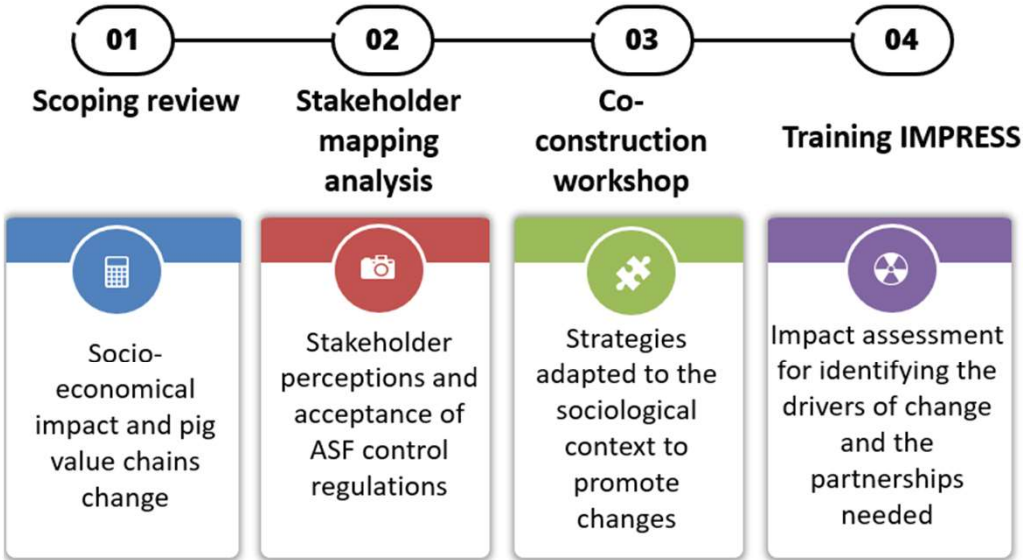




Cirad studies (based on social sciences) to help develop actions together with the Authorities

Recommandation 2 : surveillance and control measures

Strengthen the application of biosecurity, including the adoption of community-based biosecurity [...] and leverage on social and behavioural sciences [...] take into account the attitudes and practices of pig holders.





Trainings of trainers (face-to-face + online modules), based on co-constructed tools, shared findings (previous studies and surveys)

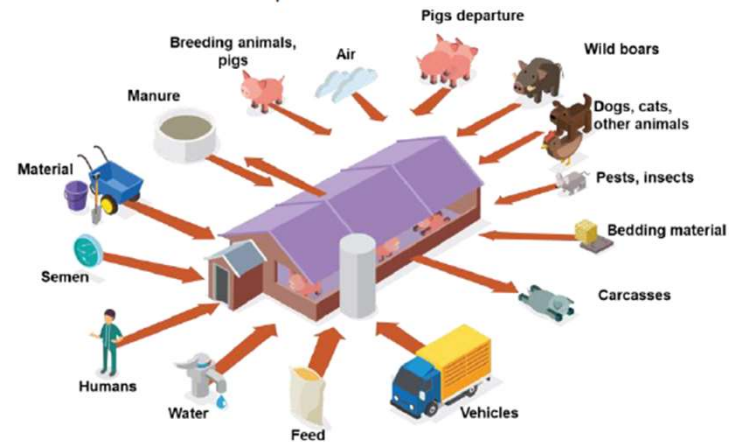


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External biosecurity

- Identify the entry vectors for infectious agents in farms and for each, propose some measures of protection





Recommandation 3 : collaboration and cooperation

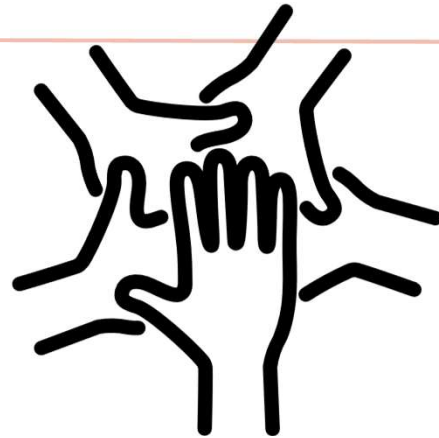
Engage the private sector and relevant associations in the formulation of control strategies and participation of technical meetings and communicate research needs to the Global Alliance for Research in African swine fever (GARA) to advocate research in identified gaps



- BIG program is based on a public-private partnership, since its development by French operators (public and private, with French Institute of Pig Chain), until the dissemination of trainings (to both public and private representatives)
- Share of the outcomes from BIG program with the world of Research : during the 90th PVMA Scientific Conference in Philippines (IFIP speaker), GARA conference last November (Cirad intervention)
- Dissemination together Universities and Insitutes (as for the first implementation in Vietnam with NLU and VNUA), in order to strenghten teaching skills



Dissemination of WOAH and FAO guidances

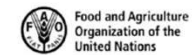


World Organisation
for Animal Health
Founded as OIE





During BIG missions, trainings and workshops, the following guidances are cited as inputs :



FAO - WOAH Guidelines on ASF diagnostics and Pen-side tests



African swine fever in wild pigs in the Asia and the Pacific Region





Exchanges

Thank you for your attention

