GREASE 7th Scientific and Steering Committee
Bangkok, Thailand 13-15/03/2018

CIRAD Collaboration

GREASE networking:

1. ComAcross : case study in Laos
2. Antibiotic used and resistance

cirad
LA RECHERCHE AGRONOMIQUE POUR LE DÉVELOPPEMENT

GREASE

COM ACROSS

GREASE networking: 2 joint activities

1. ComAcross - case study in Laos: System thinking and integrating approaches to support transdisciplinary and cross-sectoral collaboration process for one health management in Laos
2. Baseline review of practices including gap analysis and stakeholder mapping on antibiotics used and resistance

Lao case study: System thinking and integrating approaches to support transdisciplinary and cross-sectoral collaboration process for one health management in Laos

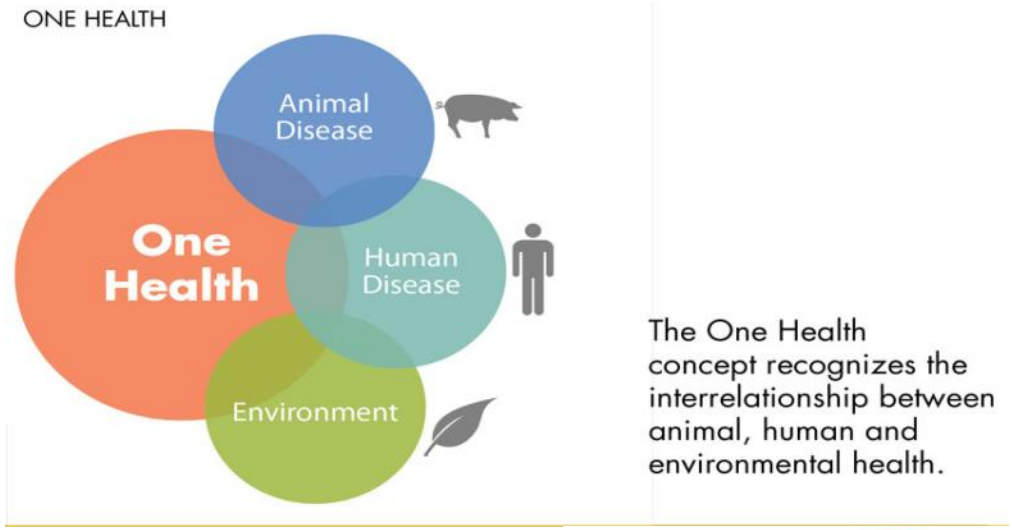
1. Ministry of Education and Sport,
2. Ministries of Agriculture & Forestry,
3. Ministry of Defense,
4. Ministry of Health,
5. Ministry of Natural Resource and Environment,
6. Ministry of Information, Culture & Tourism,
7. Center for Agricultural Resource System Research (CARSR), Faculty of Agriculture, Chiang Mai University, Chiang Mai, Thailand.
8. International Livestock Research Institute, Hanoi, Vietnam. *Corresponding author Email: F.Unger@cgiar.org
9. ComAcross Project, EuropeAid One Health Programme in Asia,

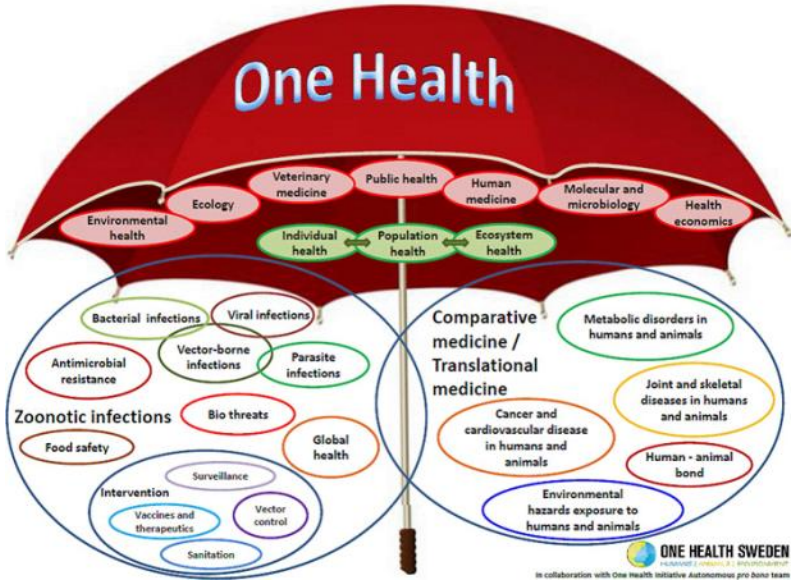
Overview

1. Introduction
2. Objectives
3. Material and methods
4. Results
5. Conclusions
6. On going

Introduction - Why Transdisciplinary is important for One health?

1. What is one health?
2. Who are involved?
3. Lao contextualization
    - Ministry of health
    - Ministry of agriculture and forestry
    - Ministry of Natural Resource & Environment





Parasitic food-borne diseases (PFBD) in Laos

- ✓ PFBD are neglected and expected to be widely distributed in Laos.
- ✓ PFBD can significant impact on human health, livelihood and economy.
- ✓ Lack of detailed information and evidences.

(Anantaphruti, 2001; Krause & Hendrick, 2011; Rushton, 2009; WHO, 2011)









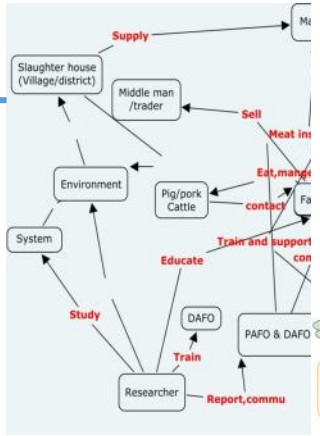
Objectives

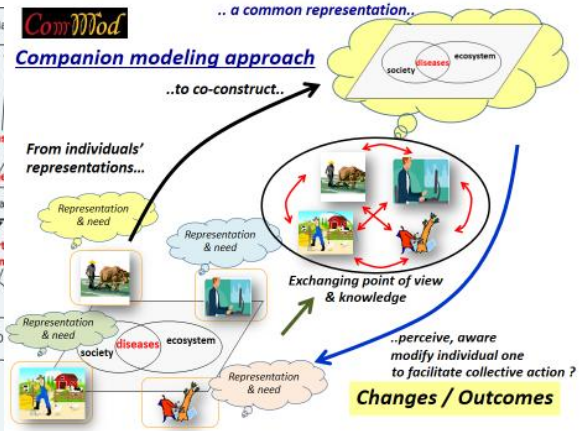
- Bringing system thinking and participatory approaches into practice for better understanding the risk context of the parasitic food borne diseases (PFBD) and collaboration among locals who are at risk, relevant disciplines and ministerial sectors
  - Assess PFBD distribution in southern Laos.
  - Understand risk-related perception & practices
  - Establish a cross-sectorial collaboration platform to promote feasible prevention & control

Strengthening capacity building with stakeholders

Sustainable collaboration platform and promotion a way forward

Materials and methods





- **PARDI was used**

  A common tool of companion modeling approach (ComMod)

  "Lao long term case study on PFBD"

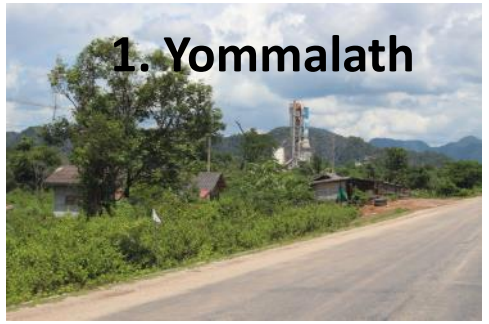
- **Steering committee & Scientific team establishment**
  - **Total 6 ministries participated**

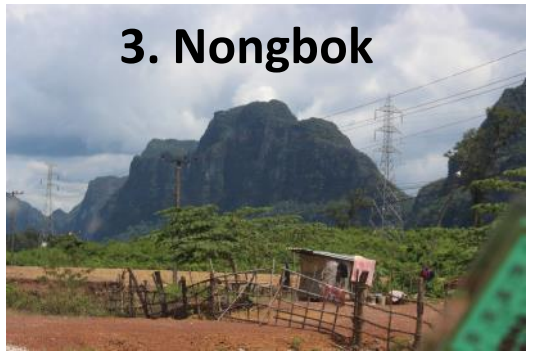
- **Participatory rural appraisal (PRA)**
  - **PE tool**
  - **FGD, ranking, Transsect,..**

- **27 villages, 9 districts, 3 Provinces**

Study area

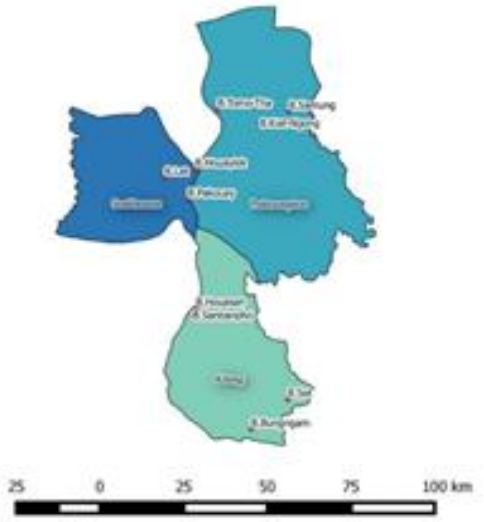
Khammuan province





Savannakhet province

Champasak province



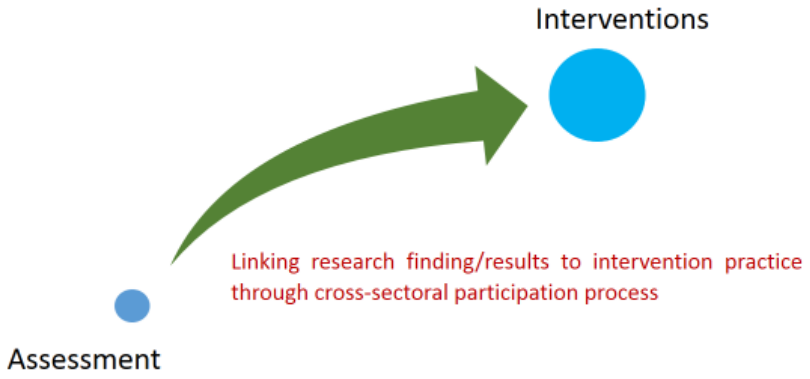
Materials and methods (Cont.)

❑ Collaboration platform establishment

- ❑ Workshops and trainings
- ❑ TWG&SC meeting and conferences
- ❑ Capacity building (serological sampling,….)
- ❑ Information feed-back
- ❑ Networking (KU, KKU, CMU, Oxford, GREASE, etc.)

❑ Intervention (prototype activity)

- ❑ Disseminate good practice & knowledge
- ❑ From platform & scientific knowledge to real practice



Results

1. Scientific team workshop and training

II. Established interdisciplinary team

1. Veterinary medicine, Faculty of Agriculture, NUOL
2. Faculty of Social Science, Faculty of Environmental Science, NUOL
3. Veterinary Division, DLF, and local staffs, MAF
4. Medical doctors, Sethathilath hospital, MOH
5. One health/food safety expert, International Livestock Research Institute, Hanoi, Vietnam
6. Companion modelling, Faculty of Agriculture, Chiang Mai University

2. SC & TWG establishment

Steering committee

Steering committee establishment

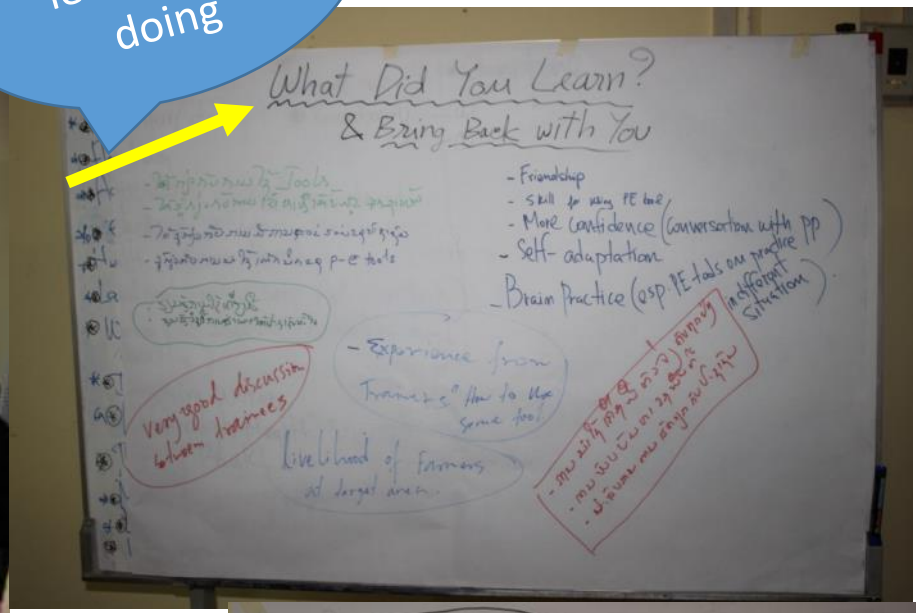
- Representatives from 6 ministries, faculties, and local governors.
- Informed/updated on the project approach and progress made.
- Agreed on duties and commitment to advise, interface with policy level.
- Extend one health effort network.

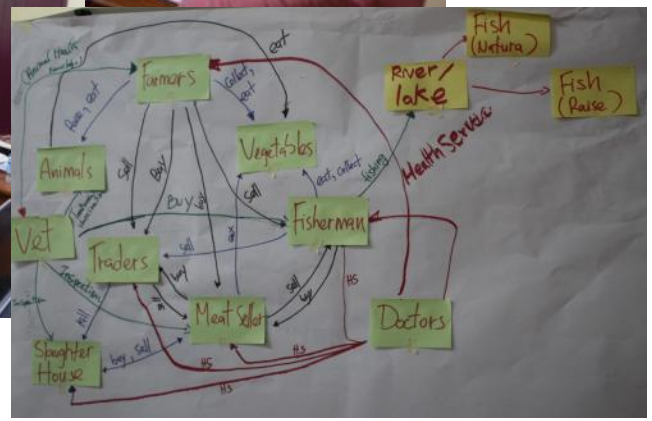
Technical working group (TWG)

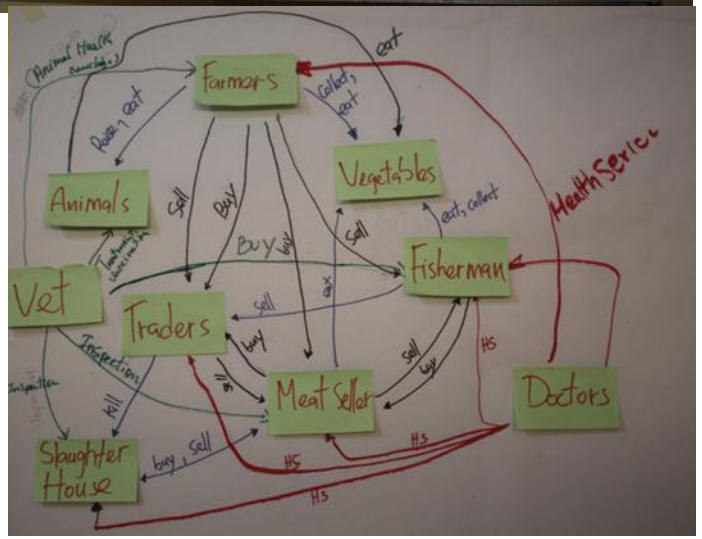
- Ministries: Agriculture & Forestry, Defense, Public health, Natural Resource & Env., Information, Culture & Tourism, Education & Sport, U. of Health Science, 3 Faculties (Env, Soc, Agri)
- Well informed and agree to the project approach & process.
- Committed to provide technical advise and support.

3. System conceptualization: highlight

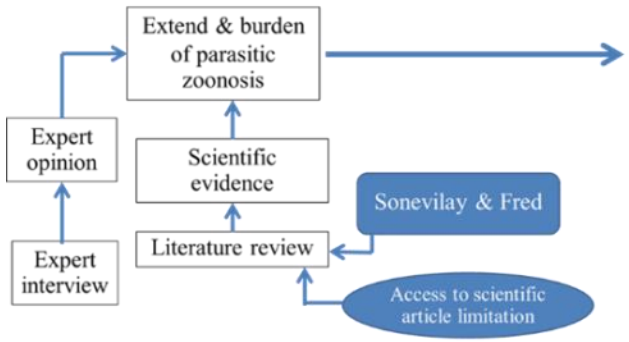
Evaluation of learning by doing







3. Highlight of Review Literature



"Parasitic zoonoses" referred to four parasites of *T. solium, T. spiralis*, *O. viverrini* and *F. gigantica*.

Group: Human, livestock&fish

Parasites	Human %	Animal %
Trichinellosis	4-59	2.1-14.4
Taeniasis/cysticercoses	0.5-46.7	0.6-4.6
Opisthorchis viverrini	10.9-84.6	

Used for:

Parasitic zoonoses distribution

Prioritization of targeted PFBD

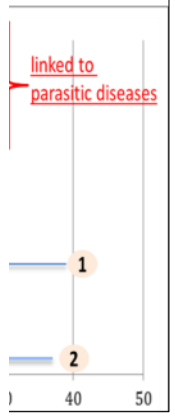
Outputs:

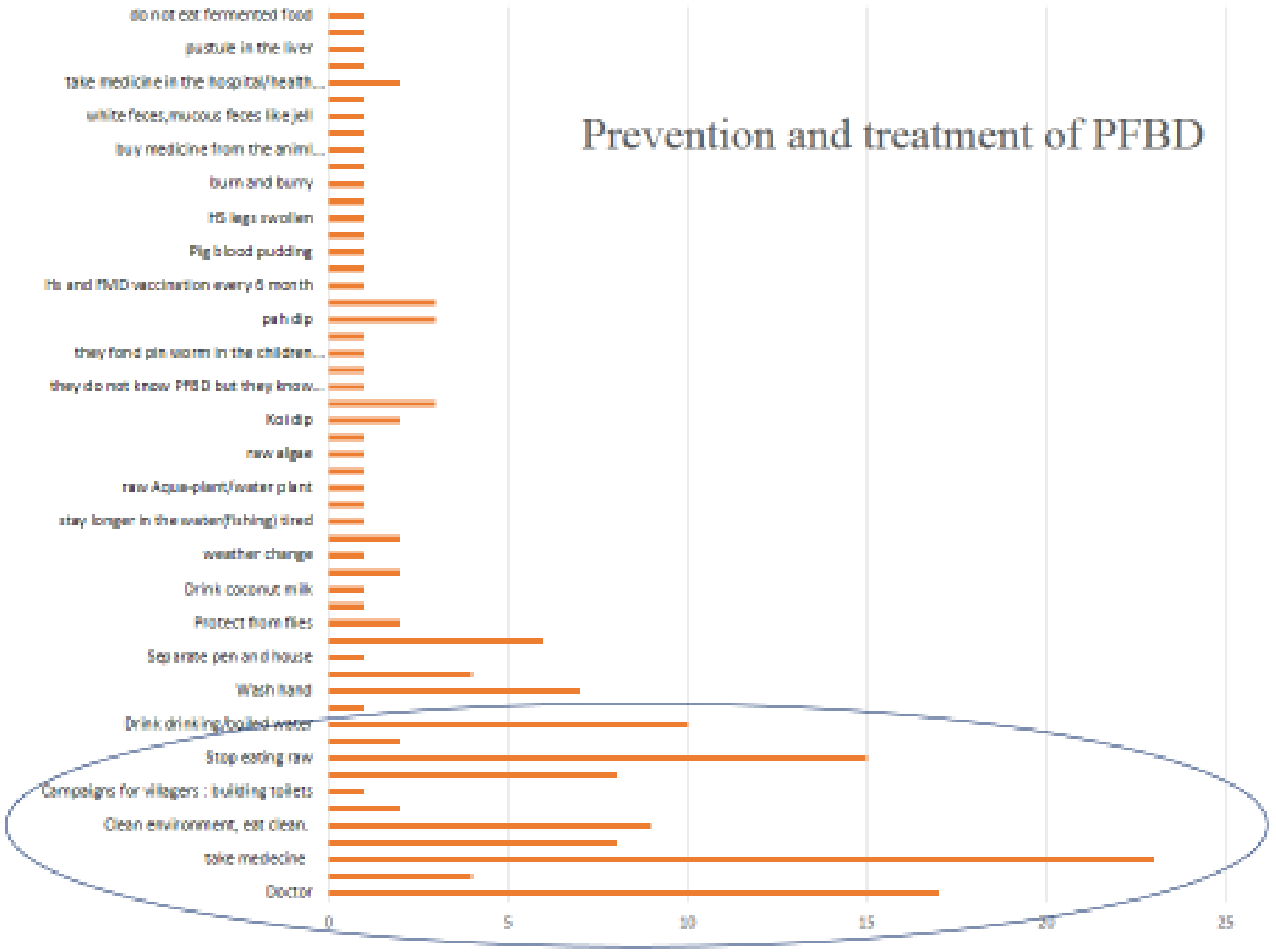
- Capacity building
- Research output, better knowledge and understanding
- Scientific output, paper submitted to peer reviewed journal

4. PRA/PE outcomes

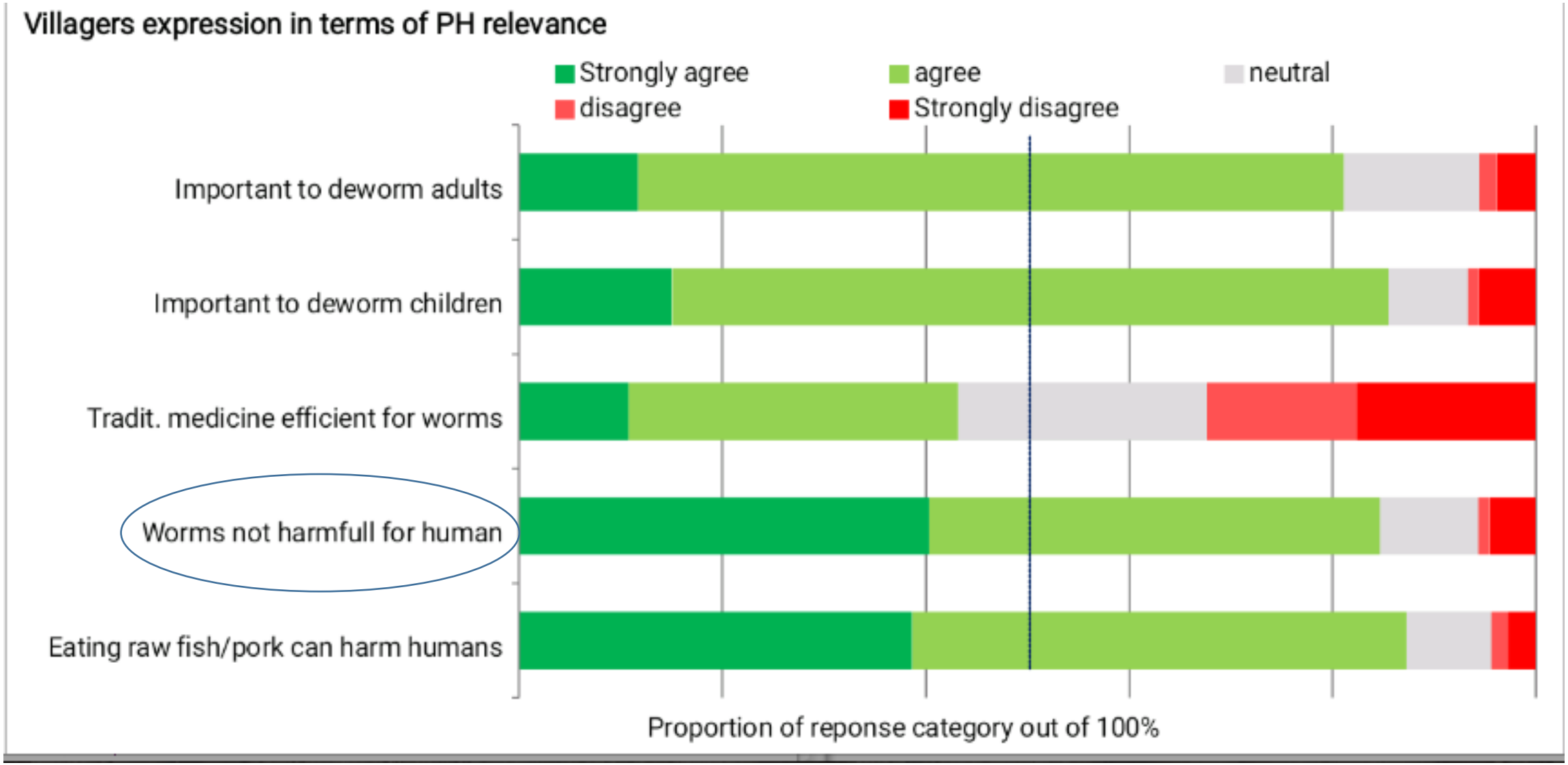
PE/PRA → comprehensive info & knowledge gained

General issue **Health issue**





Knowledge, perception and practices



Knowledge, perception and practices

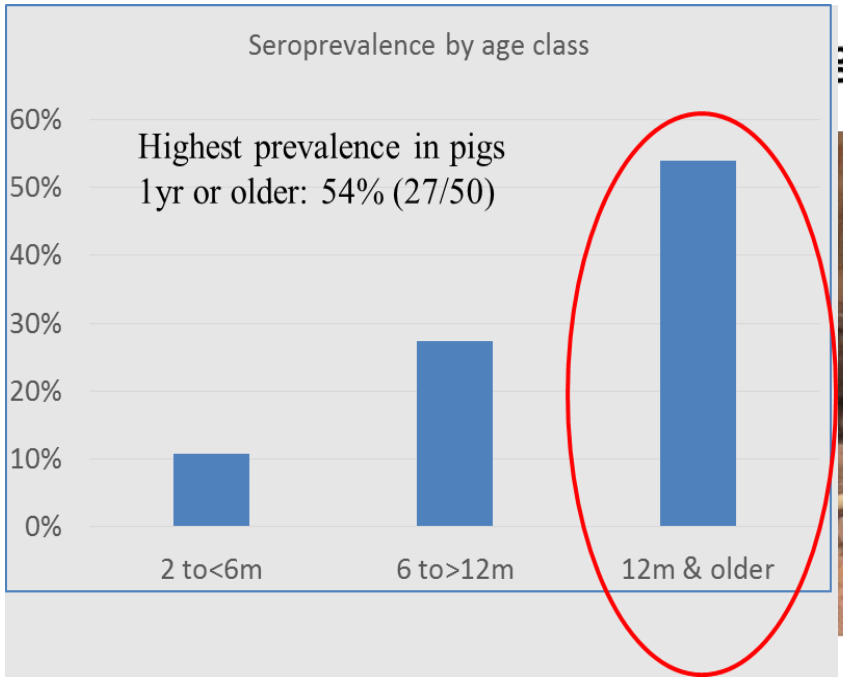
PRA/PE: Summary

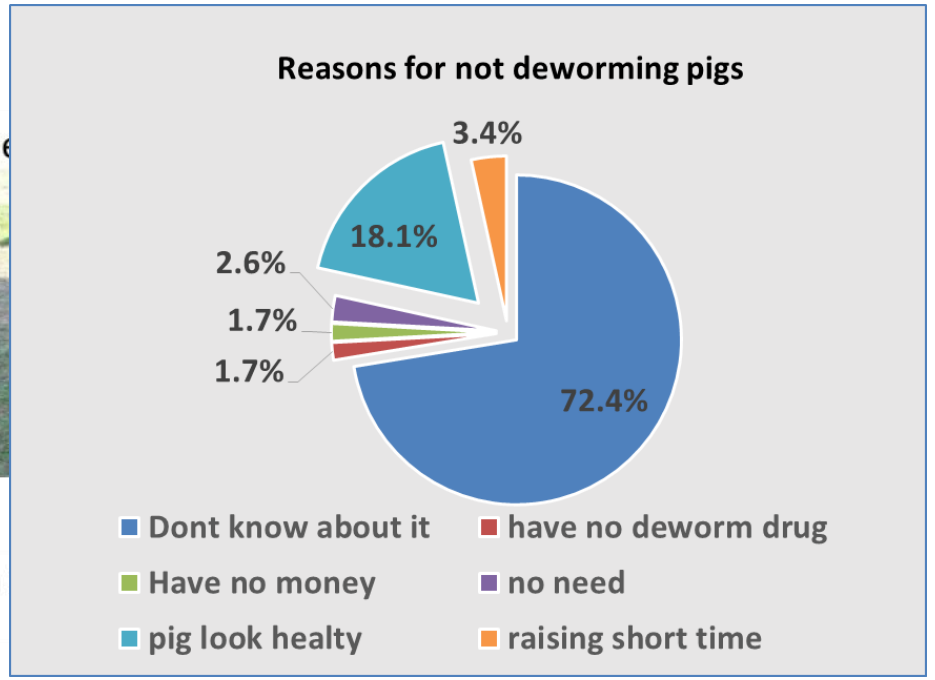
- Health and PFBD are low-ranked.
- PFBD could be linked to diverse quoted symptoms.
- Limited knowledge / wrong perception.
- PFBD-related risk practices.

PRA/PE highlights

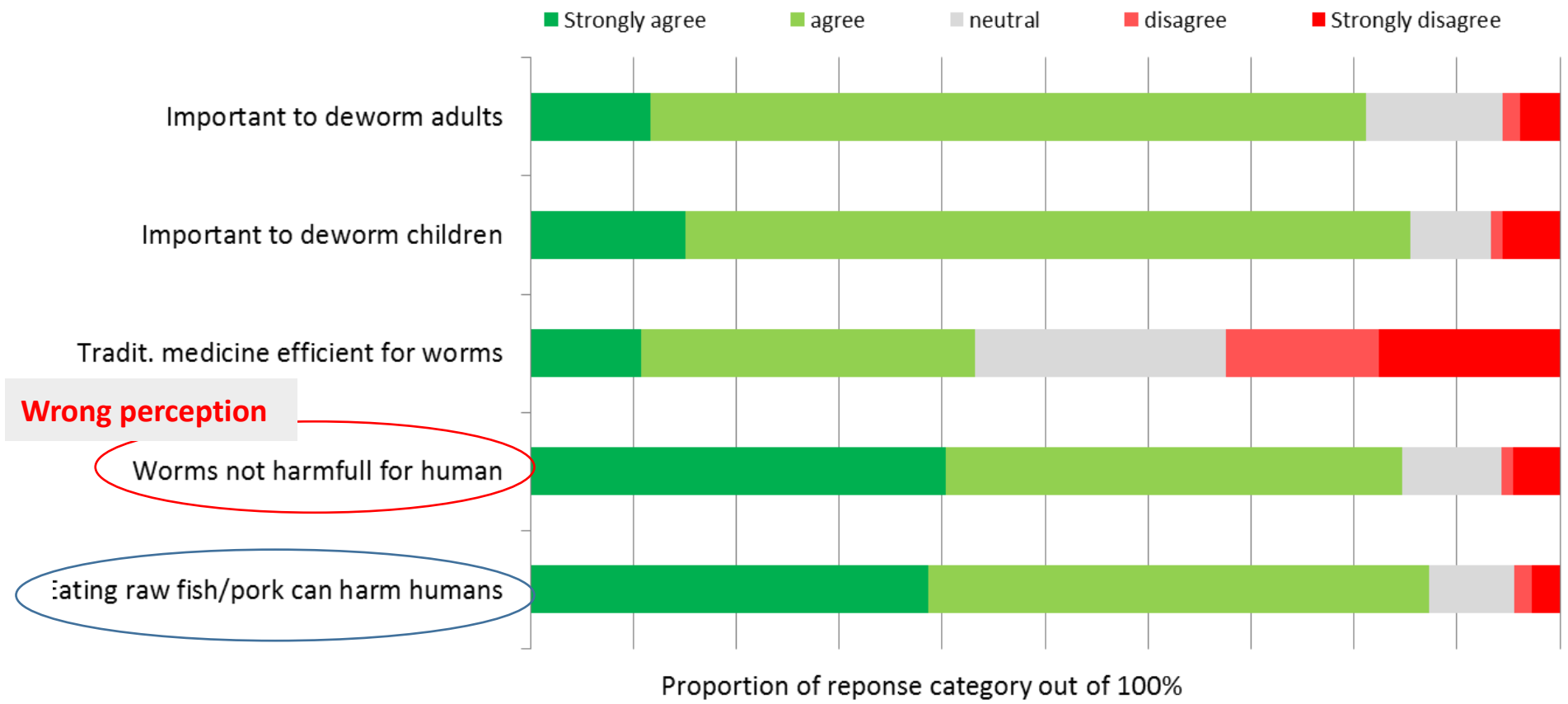
5. Serological Results

- 418 samples from 181 households were collected in 19 villages across 3 districts of Savannakhet.
- Overall serological prevalence for *Trichinella* in pigs 17.7% (74/418)
- Significant difference between districts





Villagers perception related to deworming and raw fish/pork consumption (using likert scale)



Wrong perception

Perceived correctly, (but still take risk)

Highlight of Sampling

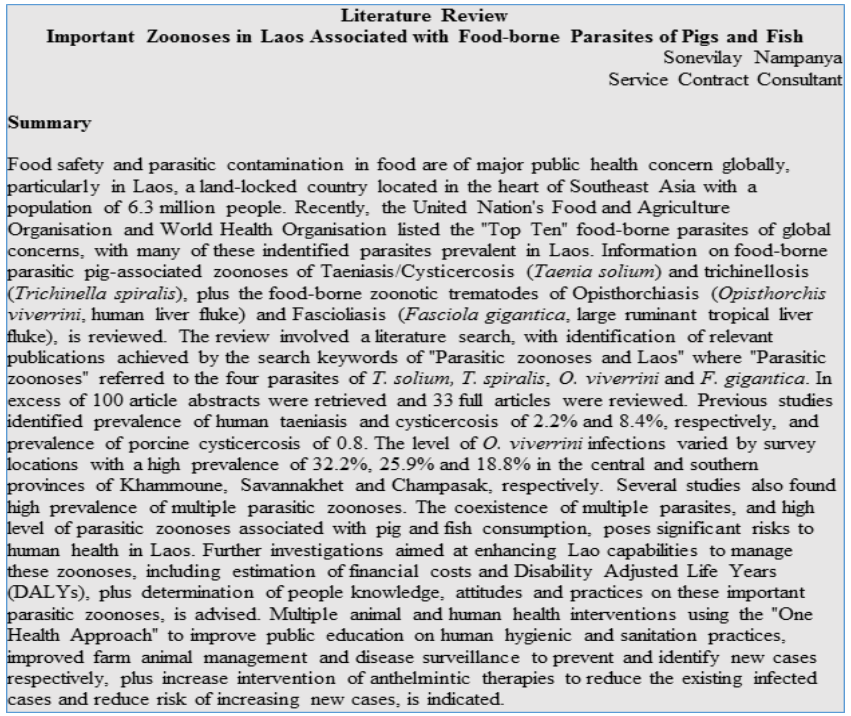
Champhone	Prevalence
Overall	9.6%
Donnongkhoun	3.8%
Haumeung	0.0%
Kaengkokthong	**36.4%**
Phonmouang	10.9%
Sakkeun	8.3%

Songkhon	Prevalence
Overall	35.0%
DonYai	29.3%
Kengtangan	**37.5%**
Khamsavang	**71.4%**
Luk11	40.0%
Nahangkhae	10.0%
Nongkhayou	0.0%
Nongkhon	0.0%
Nontaetae	34.3%
Xebunghieng	27.3%

Xonnaboury	Prevalence
Overall	4.1%
Beungsang	5.8%
Nongpheu	0.0%
Nonkhou	7.7%
Phonxaikhoun	0.0%
xaisomboun	0.0%
Xienghom	4.5%

6. Triangulated between review literature, PRA and Sero.

Parasites	Human %	Animal %
Trichinellosis	4-59	2.1-14.4
Taeniasis/cysticercoses	0.5-46.7	0.6-4.6
Opisthorchis viverrini	10.9-84.6	



Literature Review
Important Zoonoses in Laos Associated with Food-borne Parasites of Pigs and Fish

Sonevilay Nampanya
Service Contract Consultant

Summary

Food safety and parasitic contamination in food are of major public health concern globally, particularly in Laos, a land-locked country located in the heart of Southeast Asia with a population of 6.3 million people. Recently, the United Nation's Food and Agriculture Organisation and World Health Organisation listed the "Top Ten" food-borne parasites of global concerns, with many of these indentified parasites prevalent in Laos. Information on food-borne parasitic pig-associated zoonoses of Taeniasis/Cysticercosis (*Taenia solium*) and trichinellosis (*Trichinella spiralis*), plus the food-borne zoonotic trematodes of Opisthorchiasis (*Opisthorchis viverrini*, human liver fluke) and Fascioliasis (*Fasciola gigantica*, large ruminant tropical liver fluke), is reviewed. The review involved a literature search, with identification of relevant publications achieved by the search keywords of "Parasitic zoonoses and Laos" where "Parasitic zoonoses" referred to the four parasites of *T. solium, T. spiralis*, *O. viverrini* and *F. gigantica*. In excess of 100 article abstracts were retrieved and 33 full articles were reviewed. Previous studies identified prevalence of human taeniasis and cysticercosis of 2.2% and 8.4%, respectively, and prevalence of porcine cysticercosis of 0.8. The level of *O. viverrini* infections varied by survey locations with a high prevalence of 32.2%, 25.9% and 18.8% in the central and southern provinces of Khammoune, Savannakhet and Champasak, respectively. Several studies also found high prevalence of multiple parasitic zoonoses. The coexistence of multiple parasites, and high level of parasitic zoonoses associated with pig and fish consumption, poses significant risks to human health in Laos. Further investigations aimed at enhancing Lao capabilities to manage these zoonoses, including estimation of financial costs and Disability Adjusted Life Years (DALYs), plus determination of people knowledge, attitudes and practices on these important parasitic zoonoses, is advised. Multiple animal and human health interventions using the "One Health Approach" to improve public education on human hygienic and sanitation practices, improved farm animal management and disease surveillance to prevent and identify new cases respectively, plus increase intervention of anthelmintic therapies to reduce the existing infected cases and reduce risk of increasing new cases, is indicated.

- Parasitic distribution
- Tapeworm, roundworm and pinworm usually mentioned
- Very limited knowledge on cause and prevention
- Worms are common for villagers but not known as health issue
- Perception that worms are not harmful for humans (85% agreement)

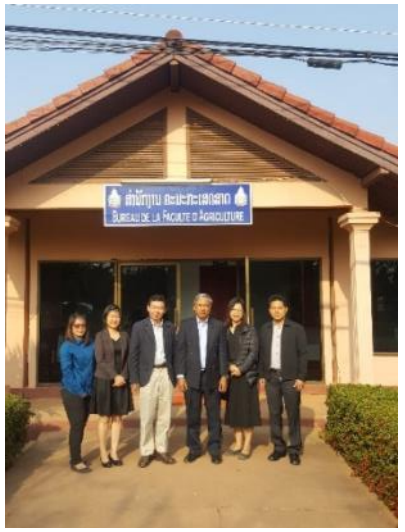
8. Networking: LAWA model visit, Khon Kaen University

- Participant from 3 districts and 3 provinces, from administrative, health and livestock offices.
- Learned the success OV integrated management joining collaboration of locals, Univ & government sectors.
- Raised awareness and collective action via concrete sci. evidences.
- The visit inspired participants for better OV and other human-animal health risk management.

9. Training: PFBD Lab analysis training result

- Totally 30 participants
- 3 kinds of parasites were focused: OV, Trichinella, Cysticercosis
- Honor guest trainers from KKU
- Dr. Fred Unger
- Dr. Bualianh from Setha hospital
- Good feed-back

	Very good (%)	Good (%)	Medium (%)
1. Contents			
Subjects	55.6	33.3	11.1
Continuity and relevance of the subjects	25.9	55.6	18.5
Contents fit the objective of the training	44.5	40.7	14.8
Knowledge and skill gained is practical and applicable	26.0	44.4	29.6
Practice contents	33.4	44.4	22.2
3. Logistics and materials			
Training time allocation	29.6	66.7	3.7
Atmosphere of the training	51.9	44.4	3.7
Supporting documents	40.8	44.4	14.8
Supporting material and equipment for the practice	44.5	40.7	14.8
Presentation and lecture materials	44.5	44.4	11.1
Place and audio visual support	51.9	44.4	3.7
3. Others			
Hotel & facility	40.9	48.1	11.0
Snack and drink during the break	40.8	44.4	14.8
Vehicle and transportation	63.0	33.7	3.3



10. Networking and collaboration:

- Internal
  - One health symposium in Laos
  - Lao Lab system networking
- External
  - NTDASIA2017
  - LAWA model
  - MSU vet inter Conference
  - ICSA

11. Writing workshop

Topics for publication from writing workshop

1. **Trans-disciplinary in action toward OH issue for better PFBD management in southern part of Lao**
2. **Capacity building on OH issue using participatory collaboration**
3. **Local participatory parasitic zoonosis investigation in southern 3 provinces of Laos**
4. **Participatory “good knowledge & practice” design and development**
5. **Lesson learned and result of PE/PRA tools for PFBD investigation (OH issue) in southern part of Laos**
6. **Participatory toolbox summarize from the PE/PRA implementation**

12. Feedback meeting @ 3 provinces

- 27 villages from 3 provinces
- 3 representatives from the TWG
- 15 representatives from the provincial sectors.

❑ Knowledge verification (get feedback from the stakeholders)

❑ Exchange and improve knowledge.

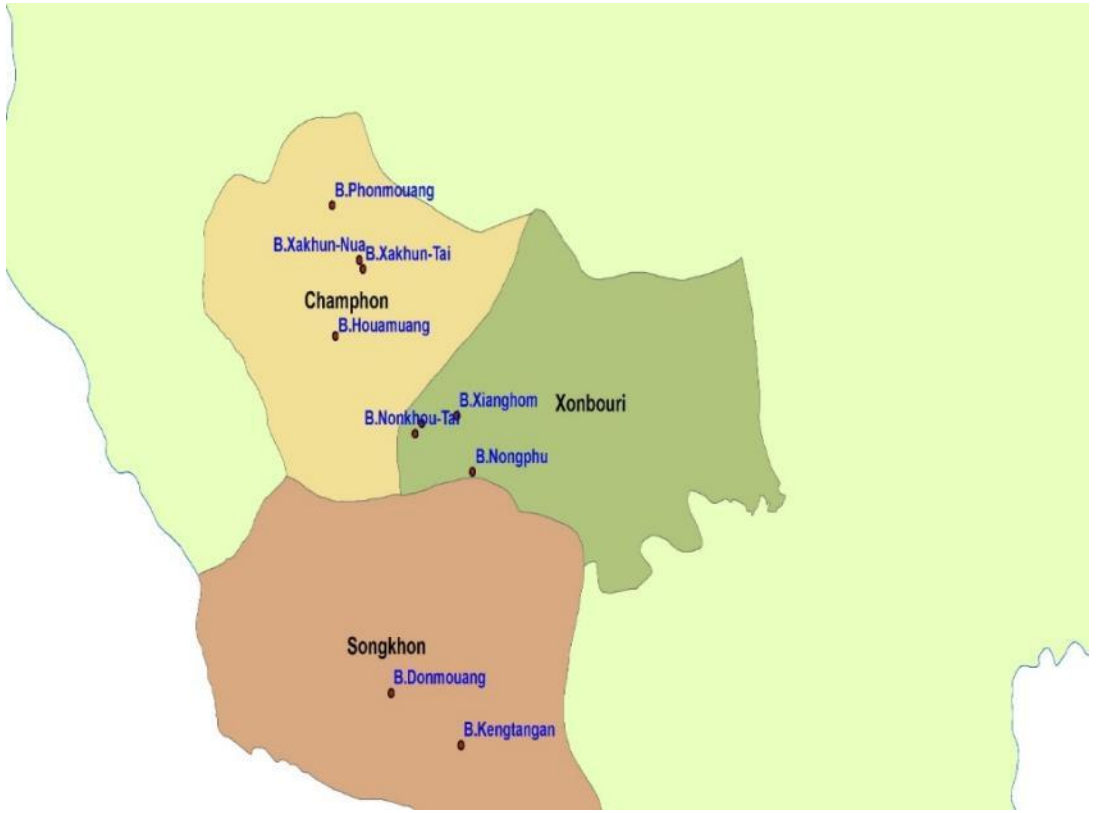
❑ Inform the research direction and activity plan.

❑ Build trust, keep connection and networking with the stakeholders.

13. Intervention

Sites selection

- Ban Kantangan
  - Serological results
  - PRA results
  - Ecology
- Village comparison
  - One village in Champhone around Soui lake
- Pre-survey
  - Human sampling



Intervention activities

- Sampling and examining at site by local cross-sectoral participation processes.
- Good knowledge and practice dissemination:
  - Media development
    - OV : Applied TDR-KKU materials (cartoon book, folk song)
  - Dissemination in action:
    - At school,
    - Target group, 2 groups
    - Utilize existing capital e.g. IEC material(information, education, communication, village speaker system, paraMed, Vet.

Outcomes from intervention

- Sampling and sample practice at site: 7-8/5/2017 and 14-16/5/2017
  - 3 sites: Kangtangan, kangkokthong and Battery (Kong ban sa karn)
  - Collect sample:
    - Feces: 99 samples, **12 positives**
    - Blood: 105 samples
    - Fishes: 6 sample pages
- good knowledge practice and dissemination
  - Media development: posters, folksongs and cartoon
  - Media implementation: display folksong, poster explanation and cartoon reading with Q&A game
  - Key actors: villagers, teachers and student
  - Learning by doing on OH within stakeholders and research team


First Draft
First Draft
First Draft
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15/05/2017


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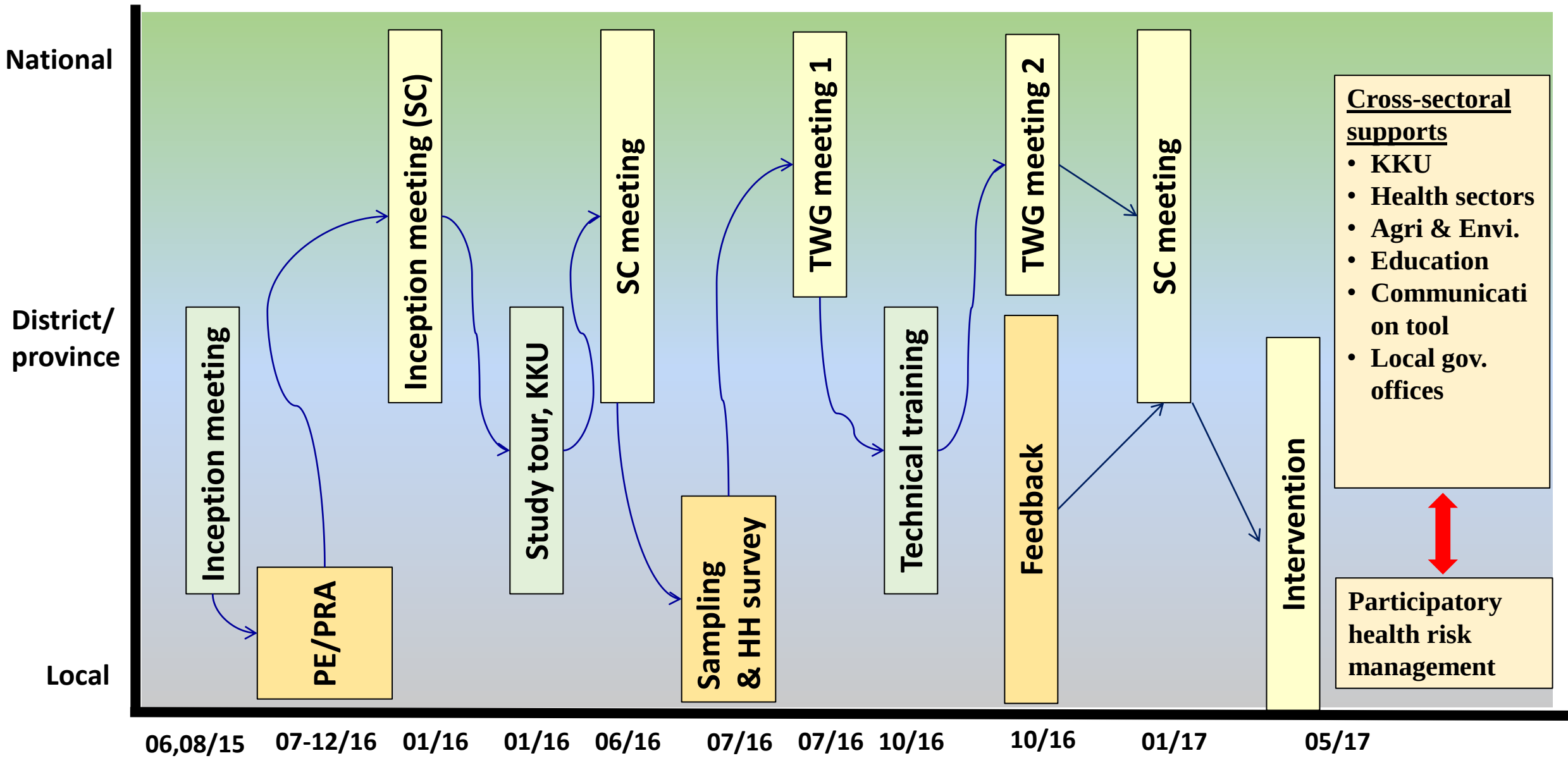
14. Collaboration platform (Trandiscipline approach)

15. Inter-sectoral collaboration



Conclusion

- The project has been establishing and building a set of capital essential for the OH issue in Laos (and in others).
  - Interdisciplinary research team, transdisciplinary efforts
  - Valid scientific knowledge for evidence-based recommendations
  - Capacity building (research team, local partners, SC and TWG)
  - Cross-sectoral collaboration platform (SC and TWG established and linked to the local offices)
  - Awareness of the people at risk.
- An innovation of developing and implementing integrated methodological framework and cross-sectoral collaboration platform for OH issue

On going

1. On farm survey (interview)
2. Keep continue sampling in pigs and humen at Champasak province
3. Lab ELIZA analysis at Nabong, FAG, NUOL
4. Information feed-back
5. One more SC meeting
6. Supported by ILRI
7. Keep pushing forward OH in Laos

Baseline review of practices including gap analysis and stakeholder mapping on antibiotics used and resistance

Objectives

Awareness of and attitudes towards initiatives **for tackling ABR, reducing ABU and using alternatives to antibiotics**

Geographic area:

Vientiane capital : Xaythany district + Naxaythong district

Vientiane province : Keo Oudom + Phonhongt

Implementations

- KAP analysis
- Antibiotic mapping
- First workshop on 23/3/2018
  - Provincial stakeholders
  - District stakeholders
  - Research team
- Project notification
- Target villages
- Information collection
- PRA/PE
- Data analysis

GREASE

Thank you very much!

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