EcoZD annual meeting

Bangkok 10-12 December 2011

A PARTICIPATORY ECOHEALTH STUDY OF SMALLHOLDER PIG SYSTEM IN LOWLAND AND UPLAND OF LAO PDR

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With support from Kate BLASZAK (CSIRO), Blanaid DONNELLY (C/ILRI)

OUTLINE

- Purpose and Background to Project
- Research methodology
- Preliminary Results
- Challenges
- Next step: Planned activities for 2012
- Expected outputs and outcomes (Outcome Mapping)

PURPOSE AND BACKGROUND TO PROJECT

Purpose: *To conduct baseline seroprevalence surveys of pig key zoonoses and evaluate public health risks of pig-raising & pork consumption in one upland and one lowland province in Lao PDR*

Background:

- Smallholder pigs owned by 50-70% of village HH.
- No prior epidemiological prevalence surveys and risk analysis. Some indicative district research findings though not comparing ecological context.
- Regional increase in zoonoses and increasing disease outbreaks compound health and production risks. Whole of family risk exposure.

RESEARCH OBJECTIVES AND GENERAL APPROACH

1. What is the prevalence, social and ecological interactions of these pig related diseases in upland and lowland context?
2. What are the important pig related zoonotic and production diseases in Lao PDR?
3. What is the possible ecological association of these diseases in different pig production systems?
4. How can priorities of trans-disciplinary researchers, decision makers and communities be combined in Lao PDR?
5. What are appropriate recommendations for intervention based on the research results?

Ecohealth - multidisciplinary, village ecosystem integration

RESEARCH METHODOLOGY

A cross-sectional data collection including blood sampling from HUMAN and PIGS with questionnaire survey for risk factors.

Training and field data collection:

- Introduction of the principle on EH with participatory sessions in EH teams that included
- Introduction of the project, diseases and known zoonoses risks
- Conducting random sampling, questionnaire interviews
- How to collect pig and human blood samples under ethical conditions.
- >>>>>

RESEARCH METHODOLOGY

Training and field data collection:

- >>>>
- How to handle and transport samples to NAHC/NCLE
- How to develop a questionnaire and enter data in Survet*

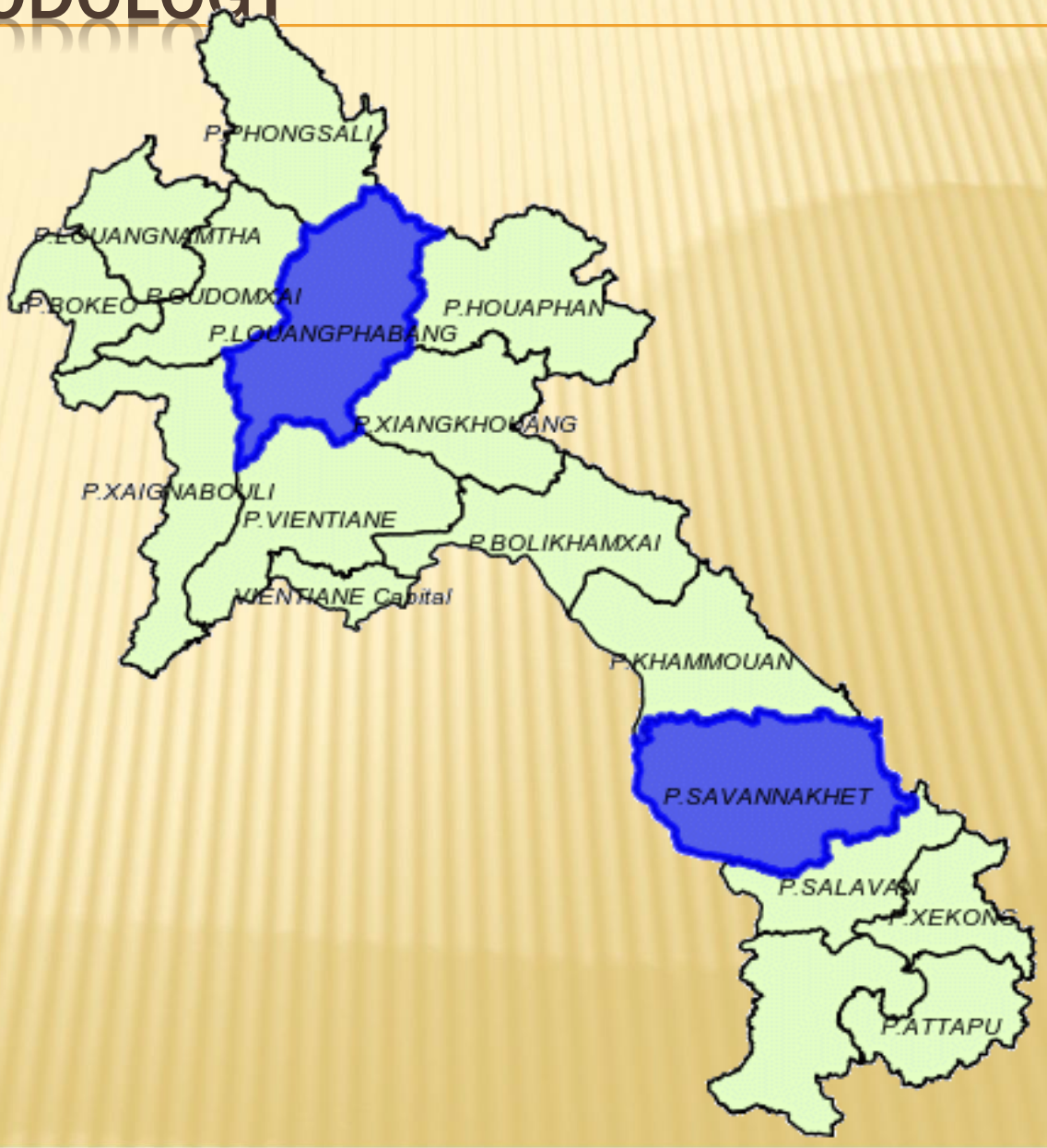
Collaboration:

- Central (DLF/NAHC, DHP/NCLE),
- Provincial and District Gov't,
- Staff of Universities and graduates of FET (Field Epi Training)
- AAHL/CSIRO on sampling designs and Survet*

RESEARCH METHODOLOGY

Each province:
30 Villages - sampled each
15 Humans
15 Pigs

PPP:Villages are randomly sampled weighted by human population



PRELIMINARY RESULTS - NEEDS RISK ANALYSIS (Q'AIRE)

NORTHERN AND SOUTHERN PROVINCIAL HUMAN SEROPREVALENCE

Antibody test	Nth (n= 447) Crude Seroprev	Sth (n = 435) Crude Seroprev	Comments	Preliminary Interpretation Next steps
JEV IgM*	4.9%	6.0%	Recent or current infection	Age stratification needed
HEV IgG	50.0%	77.9%	Actual Impact?	Higher risk in Sth; why?
Trich IgG	55.9%	37.5%	NB: cumulative exposure over time	Lower risk in Sth; why?
*Taenia solium***	**pending**	**pending**	Screening test- expect low prev.	
*Cysticercosis solium***	**pending**	**pending**	Screening test- expect low prev.	

** protein related immu noblot test (EITB).

PRELIMINARY RESULTS - NEEDS RISK ANALYSIS (Q'AIRE)

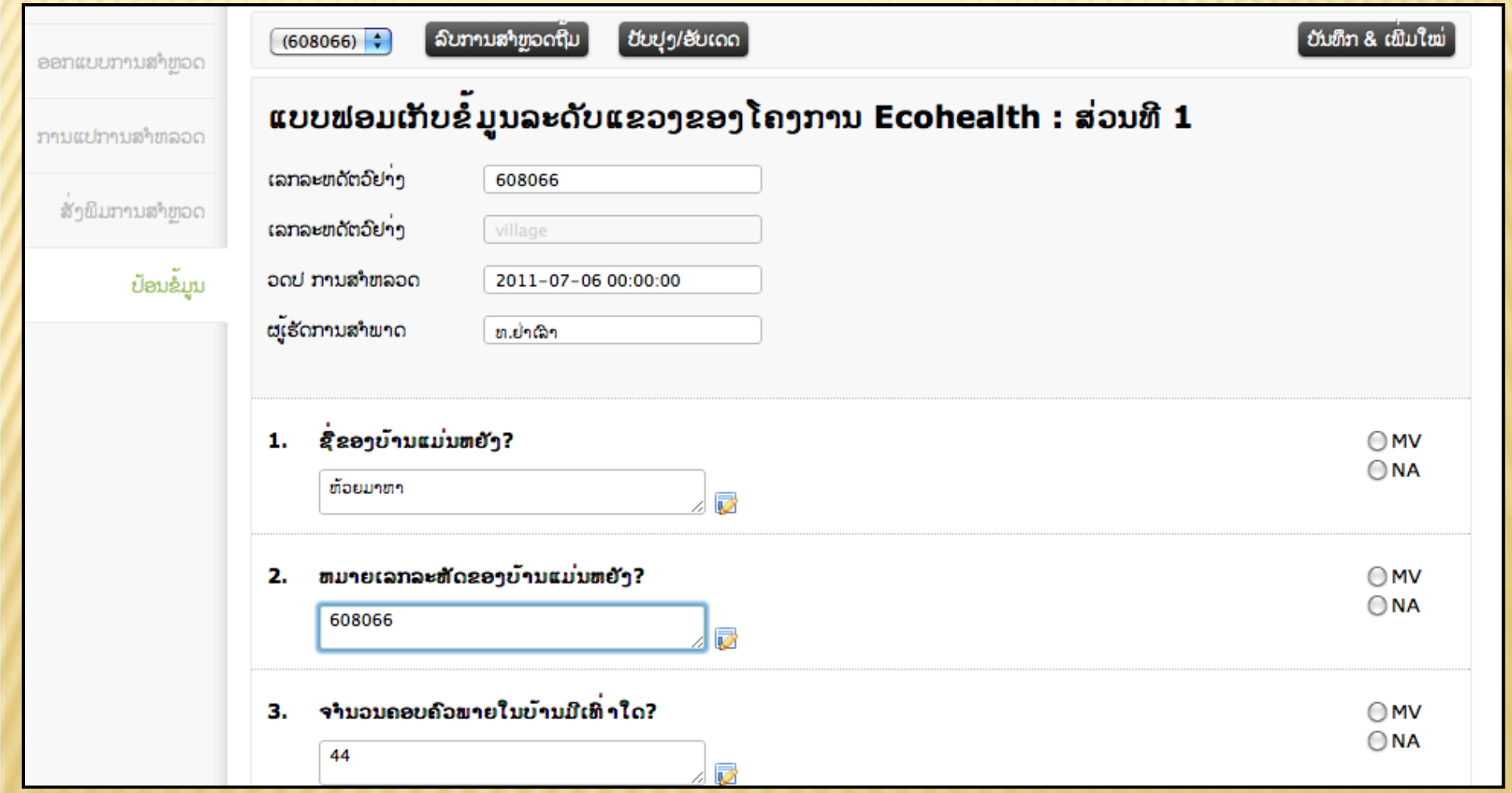
NORTHERN AND SOUTHERN PROVINCIAL PIG SEROPREVALENCE

Antibody test	Nth (n= 310) Crude Seroprev	Sth (n= 365) Crude Seroprev	Comments	Preliminary Interpretation
JEV IgG	75.4%	81.8%	Wet season	Expected high and higher in Sth
JEV IgM	12.2%	6.7%	Later in wet season IgM less?	Recent or active infection
HEV	81.9%	50.0%	Very high. Much higher than village study in Lao SB 2007	Of interest to compare with Human results
Trich	13.5%	9.0%	Crude prev vs human results	Difficult to interpret as pinpoint outbreaks usually.
CSF	7.4%	14.7%	In between outbreaks?	Relevance to vacc?
PRRS	11.3%	9.6%	New testing of local breed pigs	Need to stratify local or exotic pigs?
Erysipelas	63.5%	30.2%	Never tested before	Actual impact? Much higher exposure in Nth
FMD	2.0%	2.8%	No major outbreaks 2011 in these provinces	Interpretation?

CHALLENGES

- Time constrains
- Geographical /seasonal aspects
- Multisectorial involment
- Data analysis skills

PLANNED ACTIVITIES FOR 2012 - ANALYSIS SURVET AND MY SQL



PLANNED ACTIVITIES FOR 2012

Activity	Where	When (TBC)
Full q'aire and lab data analysis, risk ratios and discussion w experts - ranking priorities for interventions	Vientiane - NAHC, NCLE, Wellcome / MORU	Jan 2012
Results dissemination to collaborators, participants, policy makers	LP (nth) and SKT (Sth) and Vientiane	Feb 2012
Development and distribution of key message education to villagers, other strategies	LP (nth) and SKT (Sth) and Vientiane	Feb 2012

EXPECTED OUTPUTS AND OUTCOMES

- 2011 Onehealth and JTM presentations
- 2012 Peer reviewed paper(s),
- Final project report and presentation workshop for policy makersfor evidence based policy
- Greater integration of disciplines (Ministries, regional bodies) via working example and better use of existing mechanisms (Boundary partners)

EXPECTED OUTPUTS AND OUTCOMES

- Greater understanding of FET and SKU (Boundary partners)
- Subsequent behaviour change in villages
- Contribution to ACIAR and other relevant and longer projects

COLLABORATIONS WITH BOUNDARY AND STRATEGIC PARTNERS (OUTCOME MAPPING)

- NAHC and NCLE labs supported to do all testing in country
- MAF and MOH policy makers advocating collaborative disease investigation and control
- Regional staff - collect data and disseminate education after training
- NAFC, SKU, FET: strengthened and supported improved understanding and teaching of Ecohealth and field research

PERSPECTIVES AND FUTURE APPLICATION

- Ongoing collaboration of NAHC and DHP/NCLE under ACIAR project
- Ongoing national collaboration with regional staff also FET and Universities possible
- Potential to inform National policy
- And regional policy WHO, OIE and FAO (eg. zoonoses, PRRS, Erysipelas knowledge transfer)

ACKNOWLEDGEMENTS

IDRC CRDI
International Development Research Centre
Centre de recherches pour le développement international

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

CSIRO

THANK YOU FOR YOUR ATTENTION