Australian Government

Australian Centre for International Agricultural Research

Annual report

project	**Safe Pork: Market-based approaches to improving the safety of pork in Vietnam**
project number	LS/2016/143
period of report	1.07.2019 – 30.06.2020
date due	15.07.2020
date submitted	15.07.2020
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1 Progress summary

Major outputs include:

Objective 1:

A key output is a newly developed food safety performance tool (FSPT) which has been applied across key pork value chains in Vietnam. The tool provides a rapid assessment of food safety outcomes in value chains and has three pillars: Safety, scalability and societal concerns. It can be adjusted to other value chains or commodity, though some adjustment needed for hazard, commodity, cultural and country context. Recommendations from the tool are disseminated through briefs, manuscripts and consultations with government authorities (e.g. sub DAH Hung Yen and Nghe An). It also has potential to be predictive of how value chains behaved under COVID-19.
Outputs:

- Research brief (Appendix 2) & 2 manuscripts (Appendixes 3 and 4)
- Outline: 3STool for rapid assessment of food safety performance

Objective 2:

Interventions at slaughter and retail (training and low costs equipment) have started with some delay due to technical challenges (malfunction of ozone unit) and logistical difficulties around site access due to African swine fever (ASF) and COVID-19 restrictions (since Feb 2020). Nevertheless, interventions have been implemented in one small scale slaughterhouse and two traditional markets in Tien Lu district, Hung Yen. While interventions at slaughter are promising, leading to a significant reduction of contamination (*Salmonella*) more formative research is needed at retail. This will consist of testing an intervention package with “model” retailers under ideal conditions (that is an efficacy trial). With the support of private sector partner (Aqua 21) a mini-ozone disinfection unit has been installed in one slaughterhouse (Soc Son district, Hanoi). While operating well under “lab” conditions poor robustness has been observed under field conditions. The latter being currently addressed with the support of a local engineer. Other interventions such as branding of a Ban pig chain (Hoa Binh) & pro-biotic on-farm trial to reduce AMR in pig producers will commence in July 2020.

Outputs:

- Training manuals, nudge posters (appendix 5) and interventions

Objective 3:

A theory of change framework (TOC) for retailers has been developed and outcome mapping (OM) initiated to monitor behaviour and practice change in boundary partners (slaughterers and retailers). Impact pathways related to the slaughterhouse intervention model have been explored at provincial level in discussion with sub-DAH and at national level through upcoming larger development food safety initiatives. Examples include the Canadian-funded SafeGro program, and the Viet Nam Agri-Food Safety Project developed with World Bank. TOC and OM activities are currently consolidated with the support of a TOC expert.
Output: Research brief and manuscript (appendix 6 and 7)

Objective 4:

Results from FSPT and the intervention trials show the importance of a gender consideration. For example:

- Woman seem more cautious about chemical residue in pork/food than man; and worry more frequent about foodborne disease than man. The latter confirms the literature.

- Woman seem more also skeptical than men in interventions related to farm production, certification and tests.

To strengthen gender outputs the project team has initiated contacts with an ACIAR gender expert. Further in-country support will be provided by a local gender expert, currently recruited with co-funding from A4NH.

Objective 5:

Risk communication (RC) needs assessments have been expanded to the group of media, journalists, policy makers and consumers and where also supported by University of Sydney researchers and students. Knowledge and perception on food safety RC as well as channels to use differed considerable between the groups with gaps on actual risks and how to communicate them. The research team has developed a RC plan which will guide on upcoming training activities. A major output will be a Handbook on RC prepared by the HUPH team.

Outputs:

- Research brief, training plan and handbook on food safety RC (appendix 9 -11)

Other achievements:

Capacity-building achievements were:

- 35 scientists involved in research
- Students involved in research: 1 PhD, 1 MSc and 12 undergraduates
- 3 undergraduate vet students from USYD trained in Hanoi.

Research output achievements were (appendix 1):

- Articles in peer-reviewed international journals (4)
- Presentations at conferences/workshops (8)
- MSc thesis (1) and briefs (3)

Communication efforts included various broadcasting and regular social media activities. Key events included the World Food Safety & One Health Day, the 13th Safe Pork Conference, Berlin and a media training jointly organised with CropLife and Vietnam Journalism Association.

Additional funding from the CGIAR Research Program for Agriculture for Nutrition and Health (A4NH) has been leveraged for complementary activities e.g. behavioural nudges and animal welfare. In response to the COVID-19 pandemic a complementary impact survey has been designed.

A mid-term review (MTR) was done in April 2020 which provided recommendations for the remaining project lifetime.

COVID-19 has been very disruptive to operations at ILRI as for other organisations hampering travel and operations in the field. Updated work plan scenarios have been shared with ACIAR (appendix 13).

2 Achievements against project activities and outputs/milestones

2.1 Achievements to date

Objective 1: To generate actionable evidence on the efficacy, feasibility and reach of current approaches for improving pork safety in Vietnam

No.	Activity	Outputs/ milestones	Com-pletion date	Comments
1.1	Identify representative/ promising value chains for food safety evaluation and support Rapid value chain assessment	Selection of 8 to 10 value chains for food safety performance tool, Y1M3. Characterization of representative VC Y1M5. Report on VCA, Y1M6.	Y1 M5 Y2 M5 Y2 M8	Achieved & reported in previous reports
1.2	Develop a gender- and equity-sensitive food safety performance tool including indicators to measure food safety performance and verify the tool and approach with stakeholders and decision-makers.	Indicators that measure food safety performance identified Y1 M4. Tool finalized based on inputs, Y1 M6.	Y1 M4 Y1 M7 Y1 M8	Achieved & reported in previous reports
1.3	Assessment of 8 to 10 representative value chains using the food safety performance tool. Test for pork hazards. Assess implications for risk to humans; animal welfare, assessment of affordability and accessibility, costs and benefits associated with food safety practices; trust and reasons for trust.	Validated tool for pork safety performance assessment, Y1 M10. Peer-reviewed paper on food safety performance, Y1 M12 (draft) Research briefs, Y1 M 12. Recommendations for food safety authorities on used tool, Y1 M12.	Y2 M6 Y2 M8 Y2 M10	Year three achievements: - Research Brief (appendix 2) - Manuscript (appendix 3-4) Recommendations: -Stakeholder consultations delayed to the fourth quarter of 2020 due to COVID-19 lock downs. Related outputs (3-pagers): -3S FS Performance tool – outline (shared with ACIAR, Jun 20) -Future research in wet markets (shared with ACIAR, Jun 20)
Supplementary activities:				
	Regional FS performance tool	Report, ongoing as scope has been expanded (SE Asia and world)		Additional validation with country representatives has been initiated to strengthen the validity of the tool
	MSc One Health Surveillance	-Peer reviewed paper published (collaboration with USYD)		Appendix 1

**Only for internal use as publication in progress*

Objective 2: To develop, pilot and test light-touch, incentive-based approaches to food safety, in close partnership with the private sector

No.	Activity	Outputs/ milestones	Completion date	Comments
2.1	Select 4–5 value chains (VC) for testing and validation of potential interventions	4–5 VC selected Y2 M1 Report on constraints and opportunities for introducing interventions, Y2 M2.	Y2 M7 Y2M12	2 key VC have been selected: Tien Lu cooperative, Hung Yen (traditional slaughter & retail) & Da Bac (Ban pigs), Hoa Binh. MTR recommendation: Consider reducing the number of VCs to 2
2.2	Establish a food safety baseline of the selected VC's	Baseline survey dataset, Y2 M4. Baseline report, Y2 M6.	Y2 M8-M10 Y3 M10	Dataset available (Tien Lu) For other VC further delayed (Hoa Binh) due to COVID-19. Consolidate report expected Y4M3
2.3	Conduct a participatory diagnosis	Report on participatory diagnostic process and areas for intervention available, Y2 M8.	Y2 M9	Reported in 2019
2.4	Formative research to identify 'best bet' out of a range of potential options for improving FS	List of tailored interventions & technologies, Y2 M10. Publication on formative research Y3 M3.	Y2 M10	Reported in 2019 (On-station trials) <u>Year 3 achievements:</u> Study protocol – formative research at model retailers Manuscript behavioural nudges (appendix 1)
2.5	Implement the 'best bet' interventions and evaluate outcomes by experiments and trials	Trial/experiment report, Y3 M9. Willingness-to-pay report (WTP), Y3 M12. Publication (1), Y3 M12.	Y3 M9	Various outputs: -2 booklets (retailer & slaughterers) & nudge posters (appendix 5) -Probiotic trial, delayed due to ASF and COVID-19. Scoping visit (Jun 20), trial will start in Jul 20 -WTP (next reporting) -Paper (next reporting)
2.6	Develop and/or adapt business models based on 'best bet' tested in activity 2.6	Guidelines for potential business models developed, Y3 M9.		For Hoa Binh delayed due to COVID-19 and ASF outbreaks. Branding and related activities will resume in July 20
2.7	Conduct endline evaluation to track impacts, using methods appropriate to the intervention & behaviour change	Endline survey report, Y4 M3. Report on health benefit evaluation, Y4 M6.	e	Endline partly done for Tien Lu, for other VC delayed to Y4M9 due to COVID-19 lock down MTR comment: Ensure timely completion as critical to ensure policy impacts
<u>Supplementary activities:</u>				
	-Behavioural nudges -Animal welfare -Links to parasitic Food borne diseases	With support of RVC UK With support of Rebecca Doyle GIZ funded Intervention in indigenous pork VC Hoa Binh		Manuscript (appendix 1) Review, PPT & next steps (appendix 12) Joint workshops and trainings (see section 4)

PC = partner country, A = Australia

Objective 3: To validate, with stakeholders, the theory of change developed by A4NH for market-based interventions and identify steps towards scaling in the Vietnamese context

No.	Activity	Outputs/ milestones	Completion date	Comments
3.1	Form and convene an advisory group drawing from food safety agencies, authorities and private sector: Link the project to FS groups e.g. FS Task Force &, Working Group	Influential stakeholder group established (Food Safety Stakeholder Group), Y1 M3 Goal, vision and mission verified, Y1 M8	Y2 M1	Embedded in Advisory committee, existing FS Working Group (regular meetings attended) and National FS task force members Next meeting: Aug 2020

3.2	With support from partners, advisory and Food Safety Group, adapt the overall A4NH trader theory of change to the Vietnamese context. Develop a similar theory of change for interventions based on other actors if needed.	Theory of change adapted, Y2 M4 - Theory of change for other actors developed (if needed), Y2 M8	Y2M12 Delayed to Y4M3	TOC workshop (Oct 2019) OM to monitor changes is ongoing (slaughter and retail) Brief & manuscript (appendix 6 & 7) TOC for other actors (e.g. Hoa Binh) expected Y4M3 Related outputs: Two 3-pager developed and shared with ACIAR
3.3	With partners, advisory and support from Food Safety Groups, develop a roadmap for safe food based on the adapted theory of change	Detailed roadmap for taking each approach or recommendation to scale, Y2 M6 to Y4 (continuous process)	NA	Policy dialogue initiated with Sub-DAH but interrupted due to COVID-19. Scaling opportunity, slaughter-house (SH) interventions in Hung Yen. Rescheduled to Sep/Oct 20 Other opportunities through: Safer & AFSP projects (2021)
3.4	Team meets periodically meets with advisory and FS groups (other stakeholders as needed) and re-visits the TOC and roadmap considering emerging evidence from objectives 1 and 2 and external changes	Meeting or outcome mapping reports, Y2 to Y4	Y3M2	Outcome mapping is supported by consultant involved in former Pig Risk project. Continued OM reports (monthly to 3-monthly intervals) MTR recommendation: Realistic changes to expect by end of project. OM expert will support this process, Y4M3.

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Objective 4: To suggest strategies or recommendations for enhanced engagement and benefit sharing for men and women in the pig value chain through improving the gender appropriateness of interventions

No.	Activity	Outputs/ milestones	Completion date	Comments
4.1	Identify gender specific value chain entry points to reduce foodborne disease and ensure equitable benefit sharing from interventions (objectives 1 and 2)	List of gender entry points identified, Y1 M4	Y1M4	Gender training (Year 1) identified potential entry points
4.2	Contribute to tool development by integrating gender and equity performance indicators and metrics applied to evaluate performance (objective 1) Contribute to development of gendered tools for activities under objective 2	Gendered performance assessment tools and baseline/end line survey tools, Y1 M8	Y1 M10	Team get in contact with ACIAR Gender expert to review gender inclusion into FSPT
4.3	Analyse gender and equity constraints to adoption of identified food safety interventions being tested and validated in different value chains and to equitable distribution of their benefits and how they can be addressed (objectives 1 & 2)	Publication on gender, Y4 M4 Research/policy briefs on addressing gender and equity issues in food safety risk management in pork value chains, Y4 M6	Y2 M9	Literature review and gender note (see previous report) Recruitment process for local gender expert initiated (Aug 20 to Dec 21)
4.4	Using evidence from gender research in objectives 1 and 2, integrate gender more explicitly into the TOC	Gender embedded in specific outputs of objective 3, (activities 3.3 and 3.4) Y2 to Y4	From Y2 M12 onwards	See comment under 3. Recruitment for in-country gender expert initiated ACIAR expert to advice on gender aspects

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Objective 5: To build capacity in understanding food safety risk, its management and effective communication among stakeholders including key government partners, the private sector, academia and the media

No.	Activity	Outputs/ milestones	Completion date	Comments
5.1	Identify the potential beneficiaries of capacity building in risk analysis.	Needs assessment (NA) report, Y2 M3	Y2 M9	See previous report 2020 achievement: Research brief (appendix 8) Policy maker NA report*
5.2	Develop capacity in risk management and communication of the identified beneficiaries in activity 5.1, in partnership with government and academic collaborators	Feasible, simple tools available for risk communication, Y2 M9 Curricula on risk management and communication, Y3 M1 At least 300 people trained on risk management and communication, Y4 M6	Y1M10	See also earlier reports <u>2020 achievements:</u> Training materials targeting academia available and used 40 journalists trained (Vietnam) and 50 academia (region)
5.3	Identify areas of risk misperception which can be corrected by short, topical research activities Conduct targeted research activities with capacity-building of participants	Research report, Y3 M4 Research briefs (2), Y3 M6 and Y4 M6 Journal article, Y3 M12	2020	COVID-19 retailer and consumer surveys initiated, expected to be completed Y3M9
5.4	Evaluate which types of communication approaches are effectively reaching the target users.	Guidelines for effective communication outreach, Y2 M12 (further evolving over time)		-Risk communication plan (appendix 9) -Handbook for Risk management (draft) (appendix 10)
5.5	Identify key risk-related messages and channels and develop materials Communication and dissemination of research findings and key messages (e.g. with members of the National Food Safety Risk Assessment Taskforce) and Food Safety Working Group	Communication plan, Y1 M6 to Y 4 Poster, teaching materials, flyer, briefs, booklets, media broadcasting, training and workshop reports, Y1 to Y4 For private sector, technical/ industrial briefs (2), model visits (> 10), food safety fair (at least 2). Website (Safe Pork) National Food Safety Risk Assessment Taskforce publications (one per year) Y1 to Y4.5	Y1 M8	Communication officer at ILRI Hanoi office coordinates communication activities. Website online, various posts, videos and blogs (appendix 1) Contribution to various events e.g. International Food Safety Day (see also see 3.4) Model visit linked to Hoa PVC (delayed to 4th quarter 2020) 2 papers of the FS Taskforce (appendix 1)

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*MTR suggested to include policy makers in the needs assessment. Completed in Jun 2020.

2.2 Summary of achievements to date (for ACIAR website)

A tool to rapidly assess food safety performance in pork value chains has been further consolidated. It contains of three pillars: safety, scalability and societal concerns. It can be used for other value chains or commodities though some adjustment is required to specific cultural and country context. Outputs included one research brief and two manuscripts, yet to be submitted to scientific journals.

Food safety interventions have been implemented in one small-scale slaughterhouse and two traditional markets, Tien Lu, Hung Yen. While interventions at slaughter are promising leading to a significant reduction of contamination (*Salmonella*) more formative research is needed at retail. This consists of testing an intervention package in “model” retailers. Other interventions such as branding and traceability in the Ban pig value chain (Hoa Binh) & a pro-biotic on-farm trial to reduce AMR in pig producers commence in July 2020. Risk communication (RC) needs differ between academia, journalist, consumers and by gender. Tailored RC trainings will be initiated from July 2020 onwards. Promising impact pathways include upcoming food safety initiatives, e.g. Safegro, a Canadian funded project.

We have continued linkages with academia and private sectors partners (e.g. BioSpring). Thirty-five researchers, one PhD student, one MSc students and thirteen undergraduates (Vietnam and Australia) are attached to the project and capacity has been further built on animal welfare, risk assessment and behavioral nudge theories. Project scientists have organized trainings in Vietnam and the region and published four peer-reviewed journal articles and three briefs. A mid-term review revealed overall good progress.

3 Impacts

3.1 Scientific impacts

Dissemination of results of Safe Pork and aligned activities has continued as in previous years. This includes, four international publications in international peer-reviewed journals. Safe Pork researchers contributed substantially to the 13th Safe Pork Conference (13th International Symposium on the Epidemiology and Control of Biological, Chemical and Physical Hazards in the Pork Chain) in Berlin, Germany, 26th to 29th August 2019 with one presentation awarded. Overall 8 presentations including posters were provided by project scientists in national/international conferences or at training courses/workshops (appendix 1).

Scientific impacts aligned with capacity impact has been gained through the continued recruitment of a PhD student (HUPH) and defence of one MSc thesis (Vietnam).

New research methods and tools have been published in form of a journal article or briefs:

- Exploring the potential of using nudges to promote food hygiene in the pork value chain in Vietnam
- Research brief and manuscripts (FSPT used under objective 1)

Efforts continued to disseminate and discuss Safe Pork research through national platforms such as the Food Safety Working Group (FSWG) and the MALICA scientific conference. Safe Pork results were presented at the 2020 Agriculture, Nutrition and Health conference (ANH2020, June 2020) and Ecohealth Asia Symposium (November 2019 in Hainan, China). Furthermore, Safe Pork researcher contributed to regular FSWG meetings (2) and publications (2) of the Food Safety Taskforce for Risk Assessment (appendix 1).

3.2 Capacity impacts

The capacity building impacts during the reporting period benefited partners involved in research, in particular:

Vietnam National University of Agriculture, VNUA

- Scientists: 8 (3 females and 5 males) including Mr. Pham Van Hung, team leader.
- Students - economics: 5 (4 females and 1 male) all undergraduate.
- Mr. Duong Nam Ha finished his PhD program at Tasmania University under the John Albright Scholarship (JAF) in November 2019 and support Safe Pork.

Hanoi University of Public Health, HUPH

- Scientists: 5, including Mr. Phuc Pham Duc (team leader).
- Students: Mr. Hải Ngô Hoàng Tuấn has been recruited as a PhD student since May 2019 onwards.
- Research assistant Mr. Nguyen Thanh Luong obtained a MSc scholarship to study One Health in Belgium. His departure is delayed due to COVID-19

National Institute of Animal Science, NIAS

- Scientists: 5 including Ms. Le Thi Thanh Huyen (team leader).
- Students: MSc Ms. Dinh Khan Thuy (Thesis defended in Nov 2019). Related scientific outputs are added to appendix 1.

University of Sydney: Jenny-Ann Toribio and Auriol Purdie. Three students of the Doctor of Veterinary Medicine degree joined the Safe Pork project for a 3-week placement (02-20 December 2019). An activity report is attached to appendix 11.

ILRI Safe Pork scientists: Fred Unger, Hung Nguyen, Thinh Nguyen, Nicoline De Haan, Christoph Weber (till Dec 2029), Le Thi Huyen Trang (since June 2019), Sinh Dang Xuan (since Jun 2020). Adviser Delia Randolph.

Supporting scientists: Capacity on specific research fields (e.g. behavioral nudges and animal welfare) has been continued through joint publications (behavioral nudges) and surveys (animal welfare) with the support of national/international supporting scientist.

- Behavioral nudges: Barbara Haesler, Matthew Hennessey (RVC, UK), Karl Rich (ILRI).
- Animal Welfare: Rebecca Doyle (University of Melbourne, Australia), Duong Van Nhiem (VNUA, Vet, Vietnam), University of Melbourne students: Shayal Bidesi and Yushara Wijerathna (appendix 12)
- Quantitative Microbiological Risk Assessment: Kohei Makita (RGU, Japan)
- Johanna Lindahl, ILRI/Upsala University, co-supervisor for PhD student Hải Ngô Hoàng Tuấn

Private sector: Specific support was provided by Bac Tom (Mr Chien), Aqua 21 (Ms C. Peyton and Mr T. Costello), BioSpring (Ms Giang) and Tan Viet Feed (Mr Cuong).

3.3 Community impacts

Building up on recent years achievements on the field of pork safety including promising results on interventions at small scale slaughter (use of grid and more hygienic practice) Safe Pork researchers are well linked to larger development food safety projects. This includes the Canadian-funded SafeGro program, and the Viet Nam Agri-Food Safety Project (AFSP) developed with World Bank; the first with focus on risk based approaches and capacity building, while the latter having stronger emphasis on regulations and oversight (certification/traceability schemes etc), both giving the potential to boost uptake of Safe Pork interventions long term.

Potential pathways for impact have been also explored on a national level. For example, discussion have been initiated with local government authorities (LGAs) in Hung Yen and Nghe An prior to the COVID-19 lock downs. Follow up discussions with authorities (e.g. sub-DAH) have been re-scheduled to Sep/Oct 20 due to COVID-19 restrictions and will explore how best to integrate slaughterhouse research results into LGA policy and communications outputs.

Strong support has been also shown by local authorities in Hoa Binh for continued work in the area of branding Ban pigs. Evidence from the Food Safety Performance Tool, FSPT (Objective 1) and the risk communication needs assessment (Objective 5) suggests that ‘knowing the origin of food’ is a top priority for consumers. Planned risk communication efforts are expected to reach a wide audience, further details are shown in appendix 9.

Considerable community impacts have been gained in a jointly conducted awareness campaign on food safety aspects between Safe Pork and a BMZ project on parasitic food borne diseases (FBD) in Hoa Binh communities (see 4).

Safe Pork is one of a suite of ILRI-led projects that is testing different approaches to impact at scale in traditional markets. Once evidence is synthesised from these projects we will have a set of strong recommendations and tools for use in different contexts.

3.3.1 Economic impacts

No direct impacts during the reporting period have been achieved as started interventions at slaughter and retail yet to reach a representative number of value chain actors to be conclusive on economic impacts. But first results from interventions at slaughterhouse indicate a promising trend in reduction of *Salmonella* in pork (carcass surface) from 43% (6/14) to 18% (5/28). Assessment of economic impact is specifically addressed as a research component of Mr Hải Ngô Hoàng Tuấn (HUPH PhD student) in conjunction with VNUA (econ team).

3.3.2 Social impacts

No large-scale direct impacts during the reporting period have been achieved as interventions have so far reached a limited number of retailers and slaughterers. However, risk communications campaign with CropLife and Vietnam journalism association for journalists in Vietnam, together with communication on food safety to community members and health and animal workers jointly conducted with FBPD project could raise awareness of food safety information among key stakeholders.

3.3.3 Environmental impacts

No direct impacts during the reporting period have been achieved as interventions have so far reached a limited number of retailers and slaughterers. With wider involvement of targeted value chain actors' more valid conclusions are expected for the next reporting period e.g. a marked reduction in microbiological contamination at slaughter and retail due to improved hygiene is likely to contribute to reduced environmental contamination.

3.4 Communication and dissemination activities

A project website (mediawiki) is maintained and regularly updated. News articles and project updates targeted at general audiences were also regularly uploaded on various websites and blogs including HUPH website, ILRI Asia blog, ILRI News blog, AgHealth blog, and the Facebook fan page of ILRI Vietnam. The latter being launched in March 2019 with 1,200 followers so far and an average of 7,000 reach per month since opening.

List of scientific outputs (see appendix 1)

Contributions were also provided to the regular ACIAR Newsletter and ILRI East and Southeast Asia Newsletter.

Other events
On 6 June 2020, Safe Pork researchers celebrated the World Food Safety Day. A range of key messages from Safe Pork project was communicated and disseminated on different social media channels of ILRI. A video on SafePORK project interventions at slaughterhouse was produced and launched on the day. A blog post on SafePORK interventions at traditional markets in Vietnam was developed and posted on the day. A contest of photos and videos on food safety was also conducted during 7-15 June 2020.

Safe Pork researchers joined policymakers, human and animal health researchers and investors from Bangladesh, Cambodia, Laos and Vietnam met at a One Health and antimicrobial resistance (AMR) research coordination workshop on 7–9 October 2019 in Hanoi to discuss the challenges impeding efforts to combat antimicrobial resistance (AMR) and identify ways to better coordinate AMR interventions in the region. Safe Pork plans a farm intervention with support of private sector partners in Vietnam to replace AMR by pro-biotics.

Safe Pork team and its partners joined the rest of the world to celebrate the International One Health Day, 3rd Nov 2019, by sharing (video) stories of One Health in action to draw people's attention to the need for a One Health approach in addressing global health threats.

Safe Pork researchers attended a media workshop on food safety and risk communications that was organised by ILRI, CropLife and Vietnam Journalism Association on 19 December 2019 in Vinh Phuc province, Vietnam. Forty journalists from a cross section of Vietnam's news agencies and magazine publishers attended the event. The media practitioners were targeted because of their role as intermediaries of information between food safety researchers and the public. Media attendees were also approached to join a risk communication needs assessment survey under objective 5 of the Safe Pork.

Safe Pork researchers contributed to the 13th Safe Pork Conference in Berlin, 26th to 29th August 2019. This included 3 presentations, one of them awarded and side discussion with the conference organisers, FU Berlin, Vet Faculty. The organiser also stated a strong interest to organise the 15th or 16th Safe Pork conference in SE Asia, preferable Vietnam.

Major project meetings/workshops

- Bi-annual team meetings

12th Nov 2019 with participation from all project partners including USYD

- MTR

The project mid-term review (MTR) was organised virtually from 7th to 9th April 2020. The MTR was attended by the Safe Pork team, Pham Thi Ngoc, director of National Institute of Veterinary Research (NIVR), a local reviewer of the project, and Anna Okello and Nguyen Thi Thanh An from ACIAR. Overall feedback was positive with activities largely on track, key recommendations have been provided and agreed.

Linkages with CG initiatives in Vietnam

Efforts continued to inform the work of different components of A4NH in Vietnam Flagships FSHD (Food Systems for Healthier Diets), Food Safety and IHH (Improving Human Health). Safe Pork team members continued to participate in and contribute to quarterly A4NH country coordinating and engagement meetings.

Limited progress has been made in terms of potential synergies when it comes to interventions in joint study sites between both Flagships FSHD and Food Safety related to food markets at Cau Giay district. This is partly because of current interventions have been implemented in Hung Yen only. However, Safe Pork researchers co-authored a food system profile of Cau Giay district with A4NH researchers where Safe Pork results were presented.

4 Training activities

Short term training, trainees and study visits

Three University of Sydney students at the end of Year 2 of the Doctor of Veterinary Medicine degree joined the Safe Pork project for a 3-week placement (02-20 December 2019). This provided a short-term research training experience for these students adding to the Capacity Building achievements of the project, and the students participated in field work activities related to two Safe Pork research activities under objective 2 and 5 (appendix 11).

Two students, under the supervision of Rebecca Doyle (University of Melbourne, Veterinary Medicine) visited Vietnam, 7th to 18th October 2019, in support of animal welfare activities. This included a literature review as well as some field observation at small scale slaughterhouse in Hoa Binh and Soc Son (appendix 12).

Medium term trainees

Dinh Khan Thuy, MSc student, NIAS, University of Hohenheim. Defended her MSc thesis "Marketing and branding opportunities for Ban pig products in North Western Vietnam" in Oct 2019. Further outputs include manuscripts and presentations at international forums.

Long-term trainees

Hải Ngô Hoàng Tuấn, PhD student. HUPH. Since May 2019. Mr. Hai has been linked to the PhD program of the Uppsala University, Sweden. Key outputs include one finalized manuscript.

Short term training courses given by project scientists

Vietnam and Safe Pork:

Retailers (16, 5 male & 11 females) and slaughterers (8, 5 males & 3 females) were trained on hygienic practices in Tien Lu, Hung Yen as being part of designed food safety intervention under Safe Pork. The repeated ½ day training sessions were conducted on 22/11/2019 and 16/12/2019 respectively.

Related training events (Vietnam and region):

-Under the framework of the BMZ project
Food safety intervention trainings under the BMZ funded project "Safer indigenous pork and healthier ethnic minorities in Vietnam through better management of parasitic pig-borne diseases" were supported by Safe Pork team members. This consisted of a TOT workshop for commune and district vets and public health worker (9 males & 8 females) on 14 Feb 2020. Subsequently community members (86 females and 4 males) were trained in Da Bac district on 7 March 2020. While the focus of the BMZ project is on parasitic FBD (e.g. Trichinellosis and Cysticercosis) the training included also generic food safety messages which provided the link to Safe Pork.

-Under the framework of the SFFF Cambodia project
This consisted of a TOT workshop on food safety for vets, retailers and market authorities (39 males & 5 females) and retailers (12 males and 4 females), both held on 11 Feb 2020.

Sinh Dang Xuan, Fred Unger and Hung Nguyen supported a Food Safety Risk Assessment training at the Veterinary Public Health Center for Asia Pacific, Chiang Mai University, Thailand targeting post-graduates and FS officers from the region, Aug 2019. The trainees included 2 males and 8 females from Thailand and Indonesia.

5 Intellectual property

There are no intellectual property issues with this project.

6 Variations to future activities

Following recommendation of the project mid-term review from April 2020 the project will focus on a reduced number of pork value chains which shall represent a broad range of regions/production systems in Viet Nam. This refers to activity 2.1 under objective 2 (see section achievements to date, 2.1). Instead of 4-5 value chains emphasise will be given to 2 -3 value chains, traditional slaughter and retail (e.g. Hung Yean) and indigenous pork value chain (Hoa Binh).

7 Variations to personnel

Key variations include:

Hung Nguyen will reduce his time on Safe Pork from 25% to 10% (5% ACIAR & 5% ILRI) as he takes over the position of Co-program leadership at ILRI at ILRI Head Quarter. His move to Nairobi has been delayed due to travel restrictions.

Sinh Dang Xuan has been recruited as post-doc with ILRI since June 2020 with a time allocation of 40% (ACIAR 22% & 18% ILRI).

Delia Randolph will remain as adviser but reduced from 10% (5% ACIAR & 5% ILRI) to 5% (5% ILRI) from June 2020 onwards.

A gender expert is being currently recruited and will be charged 30% to Safe Pork (ACIAR 20% & 10 IRLI%). His/her commence depends on the success of the recruitment process.

8 Problems and opportunities

Most project activities are well underway, with several either nearing or at completion.

Problems

Challenges during the reporting period include continued African swine fever outbreaks but more recently the COVID-19 pandemic which has further delayed or interrupted on-going activities under objective 2 and 5. This affected in particular interventions in the Ban pig value chain (branding and traceability) in Hoa Binh. In response to those challenges a detailed work plan with different scenarios was developed and shared with ACIAR (appendix 13). By the submission time of this report most COVID-19 related restriction has been lifted. While this is promising it is likely that a no-cost extension is required. ACIAR will timely be informed on this.

A continued challenge was the further devaluation of AUS $. With respect to this we will carefully monitor project expenses.

A continued challenge is implementing technical innovations developed by the private sector partner Aqua 21 from UK. This is caused by technical challenges with the installed ozone unit (slaughterhouse). The unit is currently tested under lab condition by a local engineer.

While interventions at slaughter are promising we faced challenges at retail. In response additional formative research has been initiated at retail.

Opportunities

As in previous years we have been able to leverage additional funding from the CGIAR Research Program for Agriculture for Nutrition and Health (A4NH) for aligned activities e.g. animal welfare and nudges. Following discussions at the MTR A4NH will co-fund an impact survey in retailers and consumers in the region including one Safe Pork sites in Vietnam.

Building up on the highly appreciated contributions of previous volunteers we continue to explore the possible of recruitment of a new volunteer under the Australian Volunteer Program (AVI). Unfortunately, due to COVID-19 the program is temporary suspended.

A recent scoping visit of Safe Pork members at Thai Nguyen University (TNU) and other One Health partners in Thai Nguyen province, a member of VOHUN and One Health site, revealed some potential collaboration for the planned pro-biotic on-farm trial.

Collaboration with private sectors are good with BioSpring and Tan Viet feed company. BioSpring will provide probiotics for the trial for free as their contribution. Tan Viet agreed to produce feeds for this trial with specifically required feed composition.

Other promising opportunities include linkages to ongoing or upcoming food safety projects. This includes the Agri-Food Safety and the SafeGro Projects but also the BMZ funded project on parasitic FBD in Hoa Binh.

9 Budget

Kindly note that the statement is currently finalized and will be shared separately in a few days.

10 Appendices

Appendix 1: Publication list 2020 LS/2019/143

Other Appendices considered important by the project team

Appendix 2: Food safety performance of key pork value chains in Vietnam

Appendix 3: FSPT KAP Trust manuscript - Consumers knowledge, practices, and trust on food safety in different pork value chains in Vietnam*

Appendix 4: FSPT hazard and risk factors manuscript - Microbial contamination and associated risk factors in retailed pork from key value chains in Northern Vietnam*

Appendix 5: Training manuals and nudge poster

Appendix 6: Research brief - Mapping pathways toward safer pork in Vietnam

Appendix 7: Manuscript - Combining theory of change and outcome mapping in practice: lessons from a food safety project in Vietnam*

Appendix 8: Research brief - Food safety risk communication situation and training need of stakeholders and consumer regarding pork value chain in Vietnam

Appendix 9: Risk communication planning

Appendix 10: Handbook on Food Safety Risk Communication (draft)*

Appendix 11: Report on training activities - University of Sydney

Appendix 12: Animal Welfare progress – University of Melbourne/ILRI

Appendix 13: Work plan scenarios due to COVID-19 pandemic

*Not for further distribution until further notice as publication is in process or it contains sensitive information (results from biological sampling at retail).