



RESEARCH
PROGRAM ON
Livestock

More meat, milk and eggs by and for the poor

Report of the Uganda Pig Value Chain II Priority Country project stakeholder implementation planning workshop

Kampala, 18-20 February 2020



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April 2020



CGIAR is a global partnership that unites organizations engaged in research for a food-secure future. The CGIAR Research Program on Livestock provides research-based solutions to help smallholder farmers, pastoralists and agro-pastoralists transition to sustainable, resilient livelihoods and to productive enterprises that will help feed future generations. It aims to increase the productivity of livestock agri-food systems in sustainable ways, making meat, milk and eggs more available and affordable across the developing world. The Program brings together five core partners: the International Livestock Research Institute (ILRI) with a mandate on livestock; the International Center for Tropical Agriculture (CIAT), which works on forages; the International Center for Research in the Dry Areas (ICARDA), which works on small ruminants and dryland systems; the Swedish University of Agricultural Sciences (SLU) with expertise particularly in animal health and genetics and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) which connects research into development and innovation and scaling processes.

The Program thanks all donors and organizations who globally supported its work through their contributions to the [CGIAR Trust Fund](#)

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Background

Since 2012, ILRI has been pilot-testing and validating productivity-enhancing best-bet technological interventions singly to address specific constraints in Uganda's Pig Value Chain (hereafter UPVC), in the framework of the CGIAR Research Program Livestock and Fish, and since 2017 through CRP Livestock. While best-bet technological interventions developed under the Livestock & Fish CRP were identified and tested in small scale pilots, the component linking pig farmers to markets which are recognized as key to providing the incentives to the uptake of the technologies is yet to be tested.

Building on past lessons learned and work accomplished, the Uganda team is implementing a priority country project to cover the period till 31 Dec 2021. The project is titled 'Improving pig productivity and incomes through an environmentally sustainable and gender-inclusive integrated intervention package'. The project aims to improve livelihoods of women and men farmers through a market systems approach, by supporting stronger and more profitable market linkages between pig aggregators (buyers) and pig producers through market arrangements that also strengthen backward linkages with inputs and service suppliers, thereby incentivizing the adoption of the integrated productivity-enhancing best-bet interventions tested through CRPs. It will have a heavy focus on capacity building of the value chain actors on the best-bet interventions through an ICT platform, referred to as PigSmart.

To kick start the project, a launch meeting was organized on the 4th and 5th of November 2019 in Kampala. During the meeting, two major opportunities in the pig value chain in Uganda were identified and these were, the 'basket of technologies' and the 'market arrangement', respectively, which have great potential to increase the adoption and make the transit to income generation and sustainable livelihoods. Building on this work, follow up and implementation workshops for the project with stakeholder representatives were organized on February 18-20 2020, leading to the development of the key activities under each flagship for successful implementation of the project in 2020.

The February 2020 workshops were attended by the core ILRI group under the Uganda pig value chain phase II project, representing mostly CRP (flagship and cross-cutting) representatives, with external partners. The UPVC phase II team discussed the following themes: 1) reviewed and discussed the existing five scaling ambitions from the November 2019 workshop, 2) reviewed and discussed the Aggregator and service provider scoping study results and their implications for planning, 3) discussed the integration of ICT in the project activities through the PigSmart platform including developing extension messages, 4) held an internal UPVC phase II flagship and crosscutting leads team meeting to discuss the flagship integration strategy, and 5) held a workshop climate change/heat stress adaptation activities in Uganda.

Workshop Sessions

A series of five workshops spread over 4 days were held separately and facilitated by component leads (Annex 1). A summary of the different workshop sessions and next steps are highlighted below.

Scaling scan workshop

The Scaling Team provided an overview of the genesis of the scaling scan to a small core group of the Uganda pig value chain actors (Annex 2) including mainly the flagship and cross-cutting team representatives and some external partners. The scaling team highlighted the necessity to agree on realistic consolidated scaling ambition for Uganda as a whole, as the five working groups varied greatly in timeframe and scope. Also, the scaling team gave a discussion on plans to do a ‘deep dive’ on select technologies/innovations using a scaling readiness tool based on 1-2 prioritized technologies/innovations for each project component.

The follow-up objectives for the scaling scan workshop ([see report](#)) were:

- Validate/refine workshop findings – including the agreement on scaling ambitions and ingredients assessment
- Identify 1-2 prioritized innovation packages for scaling “deep dive” using the scaling readiness tool

Overall, the Scaling ambition of the Uganda pig value chain priority country project by Dec 2021, will be:

- A 15% increase in pig income among participating Uganda Pig Value Chain (VC) actors, driven in part by strengthened market linkages between aggregators, farmers and input and service providers, and business opportunities created through such linkages.
- A functional pig ICT platform, integrating market information systems & digital extension to 10,000 Pig VC actors in Uganda for an inclusive, equitable, competitive and resilient pig value chain.
- CRP working with private organizations and MAAIF and other national and local government institutions, catalyze/facilitate the adoption of pig technologies/ innovations among 20% of participating VC actors in Uganda.

Prioritized Technology or Innovation from Flagships

Eight technologies or innovations were proposed spanning the project flagships, and these were namely:

A. Genetics Package

1. AI (Community based)

- Boar stud
- Collection +processing pig semen

- Transportation + insemination
- Inseminators
- Hormonal synchronization
- Pregnancy diagnosis
 - Heat stress adaptability (Environment)
 - Linkages with market aggregators (LLAFS)

B. Animal Health

1. Biosecurity intervention using PigSmart

- Housing-Heat stress adapted housing.
- Confinement
- Disinfection
- Behavioural practices

C. Feeds and forages

1. Innovation: training and certification of small-scale feed producers

- curriculum development of the training
- training program (implementation)
- behavior change

2. Technology: forages for pigs

- Screen and test forages that are suitable for pig feeding
- New process based on the existing commercial feeds

D. Livestock and Environment

1. Heat stress adaptation

- proper detection of heat stress in hot spots seasons
- environmental modification strategy
- Proper feeding and watering
- breeding for heat stress adaptation in the long term considering the achievability on the 2021 timeframe

2. Manure management targeted for production systems

- Behavior change from free-ranging to confinement systems
- Commercial forms of biogas, vermin composting to take manure as resources

E. Livestock Livelihoods and Agri-Food System (LLAFS)

1. Market arrangement by and with pig farmers and aggregators with a win-win for both

- Quantity and quality of pigs
- Timing and pricing
- Market information systems for both parties and ensure transparency

- Backward linkages with input providers

Evaluation of proposed flagship technologies and innovations

Different flagship technologies or innovations were evaluated in a plenary discussion based on the criteria below:

1. Region/geography: Will the innovation be applied locally, regionally or nationally
2. Success/Impact: Assuming the intervention is successful, how significant would this be in terms of achieving the overall desired impact in Uganda?
3. Dependencies: to what extent is this intervention dependent on other conditions, such as the progress of other projects or components in the enabling environments, to be successfully functioning as designed?
4. The current stage describes the practical stage of how much progress has been made and the current use of technology and innovation
5. Potential challenges to scale this intervention (with emphasis on how challenging the current operating environment for this innovation was). For each indicator, three levels of scores one to three using a star system were discussed to indicated how advantageous it over the other interventions.

Technologies	Region/geography	Success/Impact	Dependencies	Current stage	Challenges
Community based AI	**	***	*	**	*
Biosecurity	***	***	**	**	**
Vaccination	***	**	*	*	*
Training & Certification of feed producers	***	***	*	*	**
Forage for pigs	***	***	**	*/**	**
Heat stress adaptation	*/**	**	**	*	*
Manure management	***	**	***	*	**
Market arrangement	***	***	***	*	**
Community based AI					

Note: Where it was hard for the group to agree on the same score, a middle and left '* / **' answer was used for future reference. The overall evaluation results are summarized below.

Scaling readiness tool evaluation of selected technologies

After the scoring was complete, the Scaling Scan Team guided the group through the market arrangement innovation that was proposed as the first selected candidate for a scaling readiness

assessment. After another thorough discussion, the training and certification of feed producers innovation were selected from the 'basket of technologies under the feeds and forage' category, as another candidate intervention for the scaling readiness assessment.

Actions

1. Recirculate the revised scaling workshop March 2020

Aggregator and service provider scoping study results

The session was facilitated by the Livestock Livelihoods and Agri-Food System focal point person. The objectives of this session were:

1. Share the results from the Aggregator and service provider scoping study ([See the report](#))
2. Discuss the implication of the key results from the scoping study on the planning and implementation of the Uganda Pig Value Chain project activities.

The study was conducted in all project study sites. Two presentations of the results were given by the consultants Stella Namazzi and Christopher Sebatta. The objectives of the scoping study were:

1. To understand the networks through which pig and pork aggregators (middlemen, traders, pork joints) source or obtain pigs as well as feed sources, drugs and veterinary services sources for pig farmers as well as the actors' business models.
2. Generate information on existing market linkages between the pig and pork aggregators, and other actors and farmers with backward linkages to inputs and service providers to inform the project's interventions and activities.

Highlights and discussions

a) Feed processors, producers and sellers

- The training of feed processors is mainly offered by feed manufacturers as they sell their products.
- None of the feed producers indicated they do feed analysis. Therefore the nutritional quality of most commercial feeds/ingredients on the market is unknown.
- There's no incentive for feed producers/dealers to conduct feed analysis
- The most commonly traded feeds and feed ingredients are for poultry, pigs and fish. The sale of rabbits feeds is gradually coming up.
- Many farmers have their own feed formulas generated based on information sharing among themselves on trial and error basis.
- Feed producers reported that there is need for alternative sources of protein other than fishmeal due to the rising cost and adulteration (quality) issues
- Feed processors and producers need urgent capacity building in feed formulation
- Guidelines for regulation of feed producers do exist but enforcement by the government is inadequate.
- The integration of ICT solutions to aid feed formulation needs to be introduced moving forward.

b) Veterinary drugs and service providers

- Client-oriented resistance to vaccinations is still a challenge based on inexperience in livestock management.

- Veterinarians are offering feed formulation information instead of making linkages with feed producers.
- Delayed payments from farmers hindering the relationship between the veterinarians and farmers. There's need to address the problem of farmers defaulting payments for services given.
- There is need to strengthen enforcement of existing policies to avoid exploitation of farmers by unqualified paravets.
- There is need for application of ICT solutions to facilitate diagnosis mechanisms using phones.
- There is need Improve infrastructure for the veterinarians

c) Market-linkages

- The discussion was basically on the implication of the scoping results on project planning concerning study design, sites for the farm level interventions and market systems intervention through live pig aggregators.
 - The aspect of contractual agreements between aggregators and farmers/producers.
 - Mode of transport of the pigs and pork.
 - Disease outbreaks and how the aggregators view it as a constraint.
 - The proportion of contribution to the pig/pork supply received from each of the districts.
 - The number of aggregators to work with based on the kind of market arrangements. An agreement of working with 24 live pig aggregators was reached.

Actions

1. Identify and profile the pig aggregators and farmers supplying to the pig aggregators, as well as feed producers and drug stockists.

PigSMART

This session involved presentations from the shortlisted digital technology companies including Akorion: <https://ezyagric.com/>, Single Spark B.V (FeedCalculator): <https://apkpure.com/feed-calculator/nl.singlespark.feedcalc>, Agri-Tech Talk Africa: <http://agritechtalk-africa.org/> and Farm radio: <https://farmradio.org/uganda/>. Additionally, participants were briefed on the role of PigSmart, an ICT platform designed to enhance the integration of information technology in the dissemination of the project's extension activities under the different flagships. The integration of user friendly solutions is expected to be delivered by different selected technology solution providers.

Discussion points

Key discussions points centred around;

1. How will different flagships package information to be delivered through the PigSmart platforms in an intergated manner?
2. How the project will engage with the technology solution provider companies in the PigSmarft platform?

Actions

1. Flagship teams to complete and submit template for extension messages for developing extension outputs for the PigSmart platform.
2. Finalize Terms of References (ToRs) with each selected solution provider as a basis for discussing and agreeing on the terms of engagement.

Internal team meeting

This objective of meeting was to have updates of ongoing research activities (initiated in 2019) and those planned for 2020. It was led by the ILRI's project coordinator Uganda. Updates were received from the flagships and cross cutting leads including LLAFS, Genetics, Livestock Systems and Environment, Animal Health, Feeds and forages, Scaling scan team, PigSmart platform. Additionally, the team, discussed knowledge management communication activities in Uganda led by Mireille, Ferrari. A plan for photography activity to capture project work in Uganda was agreed on.

Planned activities under each flagship for 2020

A. Livestock Livelihoods and Agri-Food System (LLAFS)

1. Identify and document the pig aggregators and farmers supplying to the pig aggregators, as well as the farmer locations.
2. Develop the site and sampling protocols for the project baselines and interventions
3. Develop the baseline tools for aggregators, and input and service providers. For farmers, RHOMIS tool will be applied once the productivity module is finalized
4. Conduct baseline surveys for farmers, aggregators and input and service providers
5. Uganda markets systems approach training by Ultimate Business Strategies
6. Site-level meetings with aggregators to discuss their current marketing arrangements and challenges, client base (the type of farmers or farmer groups) and the value proposition of the project as well as the project package of interventions and ICT communication strategies (PigSmart)
7. Project site-level meeting with pig aggregators, input and service providers (Feed and drug stockists)

B. Feeds and Forages

1. Consultative meeting on training and certification of small scale feed producers in Uganda.
2. Develop the training manual and protocol for the training and certification of small-scale feed producers in Uganda.
3. Identification and profiling of feed input and service providers in the project sites
4. Consultative meetings with Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Uganda National Bureau of Standards (UNBS), National Livestock Resources Research Institute (NaLIRRI), and Makerere University (MAK) to the proposed Training and Certification Scheme of Small Scale feed producers.
5. National Feeds Multi-stakeholder forum to discuss Commercial Feed production in Uganda
6. Select and test superior and heat tolerant forages suitable for pig feeding. Source for germplasm of selected forage varieties.
7. Conduct a survey of forage seed distributors in Uganda.
8. Develop feed formulation for ToTs and village-based extension staff and farmers through PigSmart platform.

C. Livestock and the Environment

1. Assess the environmental impacts of different pig production systems, and changes introduced by integrated technology packages using the CLEANED model.
2. Estimate and map potential future heat stress of pigs in Uganda focusing on outreach, producing a policy brief and organizing a stakeholder outreach event to present and discuss insights on pigs and climate change.
3. A manure management survey among smallholder pig farmers to reveal current management strategies, and opportunities for improvement.
4. Develop training materials on manure that will feed into farmer outreach plans through PigSmart.

D. Genetics

1. Follow up on linkages between semen & AI service providers.
2. Support the baseline survey through identifying and incorporating suitable appropriate baseline indicators in the RHOMIS to customize it.
3. Preparation for community-based AIs including:
 - a. Obtaining tested protocols for synchronization
 - b. Sourcing synchronization hormones
 - c. Identifying potential semen suppliers.
 - d. Develop draft protocols for AI service providers including on sensitization on community-based AI; subsidization; farmer recruitment; sow tagging; sow synchronization; semen choice; AI and associated recording; recording of events; sale details. FGD tool for feedback workshops with women and men farmers.
4. Training of farmers on AI
 - Production of a farmer fact sheet on AI, in local languages
 - Development of training course, including this project; AI and potential to use synchronization to produce cohorts of animals for marketing; actual technical procedures of AI.
5. Training of AI service providers
6. Pilot/test the community-based AI model
7. Synthesis & recommendations after piloting the community-based AI model

E. Animal Health

1. Train veterinarians at the district level on how to apply the Herd Health approach/tool.
2. Trained champion veterinarians to train other animal health service providers at The Swedish University of Agricultural Sciences (SLU), Sweden
3. Develop a herd health framework/tool
4. Develop a training manual on herd health.
5. Conduct baseline surveys of selected parasites as an indicator for good or poor management

6. Develop Health messages (herd health, AM use, reproductive management, parasite control, etc.) for the Pig-Smart Platform.

F. PigSmart

1. Follow-up all UPVC flagship focal point persons to input into the PigSmart extension content framework.
2. Finalize linkage agreements with the selected technology companies to be incorporated in the PigSmart platform
3. Meet the selected technology company representatives to pave way for a working arrangement on the UPVC.

G. Scaling assessments

1. Recirculate the revised scaling scan report for the March workshop 2020
2. Review the different UPVC flagship packages and how to priorities technologies for a “deep dive

Climate change/heat stress adaptation workshop

This session was unique for actors in the pig and dairy value chains. The actors were exposed to heat stress scenarios in both the dairy and pig value chains. The participants were taken through the results of the heat stress analysis (especially on the historic and future trends) for Uganda. See [workshop report](#) and [presentation](#).

Highlights

- Heat stress analysis results with a detailed discussion on the historic and future trends focusing on the dairy and pig value chains.
- Characterization of the pig and dairy value chains focusing on the key activities, actors and scale of operation.
- Identification of key risks under the pig and dairy value chains.
- Identification of the underlying vulnerability factors such as the climatic, biophysical, socio-economic and institutional, and the impacts of heat stress on the dairy and pig value chains
- Identification of adaptation options across the value chain stages and the proposed potential heat stress adaptation strategies focusing on what is possible to do in the current CRP program.

Actions

- Follow up on developing programs on heat stress adaptation and capacity building of farmers/processors on heat stress

Annex 1. Workshop Program

Uganda Pig Value Chain – Priority Country project follow up and implementation workshops: 18-20 February 2020

Time	Activity	Responsible
Tuesday 18 Feb 2020: Uganda Pig Value Chain Scaling Workshop		
08:45 - 09:00	Welcome and overview of the week's program	Ben
09:00 – 09:30	<ul style="list-style-type: none"> • Introduction to the workshop goals and participants • Recap of scaling approach and tools 	Iddo
09:30 – 09:45	<ul style="list-style-type: none"> • Recap of November Scaling Scan Workshop findings 	Iddo/Nicole
09:45 – 10:15	Discussion and agreement on the scaling ambition & ingredients	Iddo/Nicole
10:15 – 10:30	Tea Break	
10:30 – 11:15	Discussion and agreement on the scaling ambition & ingredients	Iddo/Nicole
11:15 – 12:00	Introduction to the Scaling Readiness and recommendations for prioritizing	
12:00 – 13:30	Lunch Break	Iddo/Nicole
13:30 - 14:00	Review possible packages from each flagship program	Iddo/Nicole
14:00 – 15:00	Discussion and agreement on 1-2 prioritized technology for the “deep dive”	Iddo/Nicole
15:00 – 15:15	Tea Break	Iddo/Nicole
15:15 – 16:00	Discussion and agreement on 1-2 prioritized technology for the “deep dive”	Iddo/Nicole
16:00 - 1700	Summary and reflection on the workshop and next steps	Iddo/Nicole
Wednesday 19 th Feb 2020: Aggregator and service provider scoping study presentations		
08.30	Objectives of the scoping visits and introduction of consultants	Emily
08.40	Presentations:	
	Vet drugs and services	Esther/Christopher
	Feed processors	Esther
	Pig/pork aggregators	Christopher
	Q&A	
10.00	Coffee break	
10.30	Discussion: implication of the results on planning <ul style="list-style-type: none"> - Study design - Sites for the farm level interventions - Market systems intervention 	Jane/Emily Emily Robert (Ultimate Business Strategy)
12.30	Lunch break	
Wednesday 19 th Feb 2020: PigSMART Session		
14.00- 15:30	Presentations from the three shortlisted technology partners followed by a 10 minute - Q&A after each session.	Edwin Kangethe
15:30-16:00	Presentation on technology integration session on our assessment of these three partners and how the technologies will work/come together under PigSMART	
16:00-16:30	Q&A, discussion, next steps	

Thursday 20 Feb 2020: Internal Country Priority Program team meeting		
08.30	Objectives and agenda of the meeting	Ben
08.45	Presentations:	
	LLAFS	Emily
	Animal Health	Michel/Peter
	Genetics	Karen/Donald
	Livestock and Environment	Birthe
	Feeds and Forages	Ben
	Q&A	
10.00	Coffee break	
	Scaling workshop – a recap of the workshop – next steps	Iddo
	PigSmart – a recap of session findings - next steps	Edwin
10.30	Discussion: general issues - Photography ; Reporting ; Introducing Pius; planning coordination of activities ; Office space briefing	
12.30	Lunch break	
Thursday 20 Feb 2020: Developing extension messages		
14:00-14:30	Content development process, template, outputs, plan, etc	Edwin
14:00-15:00	Q&A, discussion, consensus	
Resources required: flipcharts, yellow stickers, individual laptops		
Friday 21 February 2020: Climate change/heat stress adaptation workshop		
08:30 - 09:30	Present and discuss heat stress analysis results	John
09:30 - 10:30	Group Activity: Value chain characterization - Key activities, actors, the scale of operation	Birthe
10:30 - 11:00	COFFEE BREAK	
11:00 - 11:30	Group presentation on activities and key insights	Group rapporteurs
11:30 - 12:30	Group Activity: Risk matrix Identify key risks for the selected value chain - Heat stress consequences for the value chain activities - What are underlying vulnerability factors (Climatic, Biophysical, Social, Economic, and Institutional) and impacts of heat stress to the selected value chains	John
12:30 - 13:30	LUNCH	
13:30 - 14:00	Group presentation on activities and key insights	Group rapporteurs
14:00 - 15:00	Group Activity: Adaptation options - Identify current ongoing adaptation options across the value chain stages - What are the proposed/potential heat stress adaptation strategies (what is possible to do in the current CRP program and future/other programs)	Paul
15:00 - 15:30	Group presentation on activities and key insights	Group rapporteurs
15:30 - 16:00	COFFEE BREAK	
16:00 - 17:00	Next steps and evaluation	Birthe

Annex 2. List of participants

Name	Organization
Dr. Deogracius N. Woneka	MAAIF
John Mutua	CIAT
Dr. Jolly Kabrizi	Private consultant
Sebatta Christopher	MUK/ ILRI Consultant
Dr. Emily Ouma	ILRI - Uganda
Pius Lutakome	ILRI – Uganda
Kharm Kamuntu	UCCCU
Erison Tumusiime	KADPHA
Samuel Musoke	Greater Masaka C.Union
Dr. Lawrence Mayega	Masaka DLG
Michel van Den Burg	Pearl Dairy Development
Dr. Ibrahim Wanyama	ILRI consultant
Paul Zaake	CIAT consultant
Simon Lubega	MAFI
Gideon Nadiope	ISU-UP
Dr. Birthe Paul	CIAT
David Nsubuga Kituuka	MAAIF
Denis Namugera	Dairy farmers Network
George Wamunga	Ministry of Water and Environment
Dr. Andrew Atuhaire	NARO-NaLIRRI
Derick Senyonga	MWE/CCD
Christopher Mulindwa	PPM
Sheila Ayoo	ILRI
Ambrose Atuhaire	ABC/ILRI
Peter Oba	ILRI
Sulaiman Kiggundu	NARO-NALIRRI
Mireille Ferrari	ILRI
Isaac Rubayiza	MWE/CCD
Dr. Ben Lukuyu	ILRI
Dr. Joshua Zaake	ILRI – LSE
Zachary Nsadha	MUK-CVAB
Edwin Kange'the	ILRI
Stephen Escat	Farm Radio
Stella Namanzzi	ILRI – consultant
Tanansi S.Ssegujja	Mukono DGL

Richard Nuwenyesiga	Vetline Services
Iddo Dror	ILRI
Annet Bingi	AgritalkTech
Raymond Kiyingi	AKORION
Dr. Joshua Isiko	Single Spark B.V
Christine Kihunde	Jaguza Tech
Erasmus Okurut	INTERVAS
Nicole Wu	ILRI
Luca Innocent	AgritalkTech
Richard Nuwenyanga	AKORION
Dr Joshua Zaus	Ministry and of Water and Environment
Isaac Rubayiza	MWE/CCD
Dr. Donald Kugonza	MUK