JULY 2021

SCALING SCAN REPORT:

The African Chicken Genetic Gains Project - Ethiopia

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

CGIAR
RESEARCH PROGRAM ON Livestock

ETHIOPIA

This research was conducted as part of the CGIAR Research Program on Livestock and is supported by contributors to the CGIAR Trust Fund. CGIAR is a global research partnership for a food-secure future. Its science is carried out by 15 Research Centers in close collaboration with hundreds of partners across the globe. www.cgiar.org

ILRI thanks all donors and organizations which globally support its work through their contributions to the CGIAR Trust Fund.

Authors: Edwin Kangethe, Murat Sartas, Iddo Dror

Key Words: Scaling Scan, Scaling Ambition, Scaling Ingredients

Citation: Kangethe, E., Sartas, M. and Dror, I. 2021. Scaling Scan Report: African Chicken Genetic Gains. Nairobi, Kenya: ILRI.

Table of Contents

Acknowledgement

The authors would like to thank the International Livestock Research Institute African Chicken Genetic Gains team led by Dr Tadelle Dessie and ably assisted by Mr Mulugeta Birhanu for their contribution and mobilization support. We also thank the various partners who participated in the process, including the government through the Ministry of Livestock and Fisheries (Ethiopia), the Ethiopian Institute of Agricultural Research, private partners EthioChicken and smallholder chicken farmers and their group associations who actively participated in the process.

Acronyms & Abbreviations

ACGG	African Chicken Genetic Gains
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	International Maize and Wheat Improvement Center
CRP	CGIAR Research Program on Livestock
EIAR	Ethiopian Institute of Agricultural Research
I@S	Impact at Scale
ILRI	International Livestock Research Institute
M&E	Monitoring and evaluation
PPP	Public-private partnerships
SNNP	Southern Nations, Nationalities and Peoples

Executive Summary

The International Livestock Research Institute (ILRI) works to improve food and nutritional security and reduce poverty in developing countries through research for efficient, safe, and sustainable use of livestock. Translating research outputs into products that can be adopted at scale has been a significant challenge for researchers in ILRI and other Consultative Group on International Agricultural Research (CGIAR) centres. To address this, ILRI through the Impact at Scale (I@S) program has curated and adapted a set of scaling tools and approaches to help researchers address this enduring challenge in their work. ILRI's evolving I@S approach, initially summarized in the 'scaling better, together', is a modular approach with three 'tracks': light, standard, and an extended track. The light track is an adapted version of the Scaling Scan tool by the Public-Private Partnerships (PPP) Lab and the International Maize and Wheat Improvement Center (CIMMYT)[1]. The light track leads to the development of a Scaling Ambition from a stakeholder consultative process, review the Scaling Ambition against ten Scaling Ingredients, and identifies potential opportunities and bottlenecks to reaching the stated Scaling Ambition. This Scaling Scan of the African Chicken Genetic Gains (ACGG) project in Ethiopia represents this light track module of the ILRI Impact at Scale Framework.

The ACGG project aims to improve access to genetically enhanced, highly productive yet agroecological appropriate chickens for poor smallholder farmers.

The project was carried out in selected rural and suburban areas in Ethiopia. The rural areas are represented by villages from the regional states of Tigray, Amhara, Oromia and the state of Southern Nations, Nationalities and Peoples (SNNP). This Scaling Scan report examines the ACGG project using the Scaling Scan approach and tools[2]. The aim of the scan is to help the project assess and monitor the scalability of this goal of improving access to the improved chicken. This report highlights how the Scaling Scan process and its outcomes of helping the project team and stakeholders:

Appreciate the multiple dimensions of scaling

Develop a realistic scaling ambition for the project to contrinuously monitor

Understand the role non-technical factors play in scaling through their interaction with the scaling ingredients

Identify bottlenecks for scaling and provide recommendations to mitigate them

Develop a scaling mind-set

1. Jacobs, F., Ubels, J., Woltering, L., 2018. The Scaling Scan – A practical tool to determine the strengths and weaknesses of your scaling ambition. Published by the PPPlab and CIMMYT.
2. ILRI's Scaling Scan Approach and Tools were designed based on the Original Scaling Scan Approach developed by PPP Lab and CGIAR CIMMYT. They include tools and practices that enable the implementation of Scaling Scan remotely and increase the user friendliness of Scaling Scan.

PROCESS AND METHODOLOGY

This Scaling Scan followed a facilitated participatory process involving key ACGG project informants in Ethiopia. These included the core project team, key public and private partners like EthioChicken, and relevant government agencies led by the Ministry of Agriculture, and the Ethiopian Institute of Agricultural Research (EIAR). The participants were engaged in developing a realistic Scaling Ambition for the project's innovations, scoring the 40 questions in the Scaling Ingredient Survey, and setting action points on opportunities and bottlenecks identified in the survey. These respondents vary by gender, age, and seniority, work in different locations across the country and play a range of different roles.

The ACGG Scaling Scan analysis is part of a series of 10 similar analyses conducted in 2021 across ILRI and the CGIAR Research Program on Livestock (Livestock CRP) portfolio. The report is organized into several sections, starting with a section that highlights the scaling approach adopted for the analysis. The second section gives an overview of the project under study. It is followed by the actual Scaling Scan process section that provides details about the methods and approaches adopted, including the results of the various sub-sections - Scaling Ambition, Scaling Ingredient Survey, critical analysis of the Scaling Ingredients, opportunities, and potential bottlenecks. Finally, the report concludes by summarizing conclusions and making recommendations.

SCALING AMBITION

A clear Scaling Ambition is the cornerstone of a Scaling Scan; after deliberations, the project agreed on the following Scaling Ambition:

'By 2025, the ACGG project and partner organizations aim at disseminating 120 million tropically adapted dual-purpose improved chicken breeds with appropriate packaging for about 4.8 million smallholder producers in Ethiopia to improve livelihood outcomes.'

The ACGG project aims to increase access for poor smallholder farmers in rural and peri-urban subnational zones of Ethiopia to high-producing and agro-ecologically appropriate chicken genetics products. The innovation is a package that includes dual-purpose improved chicken breeds, brooding (mother units), vaccination and proper husbandry practices. The Scaling Ambition sets out to scale all components of the package as a unit.

To the question of whether there is enough evidence from the pilot phase to go to scale, the project's on-farm experiments recorded increases in egg production from some of the tested strains by 288.8, 277.7, and 271.7%. Other evidence includes:

Decrease in chick mortality

80.9% of the on-farm experiment participants preferred dual-purpose improved strains over the local chicken. Lessons learned from ACGG partners (i.e. EthioChicken) show higher adoption of dual-purpose breeds in different regions of the country.

At the smallholder level, investing in the production based on the dual-purpose improved breed has a 170% Marginal rate of return.

Current national level evidence shows that from a total of 8.92 million smallholder poultry farmers in the country,[3] the improved poultry breeds have been adopted by 1.76 million smallholders.[4] This Scaling Ambition, therefore, considers a target of 4.8 million smallholder farmers as a realistic target, considering all the factors necessary to scale a package. The working period is between 2021 to 2025, providing for a 5-year scaling period to realize these targets.

This Scaling Ambition significantly contributes to the system by transforming the low-input low-output subsistence-based traditional production system into a semi-intensive production system. The Scaling Ambition also contributes to social change by:

1. Improving household incomes, especially for women, since mostly chickens are owned and managed by women;

2. Contributes to reducing poverty, and

3. Creates employment for the youth along the value chain through added activities such as brooding, feed distribution, vaccination, production, and marketing of eggs and chicken

In addition, the innovation enhances households' resilience as the short production cycle of the dual-purpose improved breeds increases rural-household income during households' shocks such as crop failures and natural hazards. The environmental impact of the innovation is positive on net balance. Producers are also encouraged to use own producers' grains, kitchen waste, and chicken can scavenge to complement the feeds provided. Producers can construct poultry houses using locally available materials in the farm in place of using commercially produced building materials. Also, chicken production has a low environmental impact and carbon footprint compared to other livestock production.[5]

Photo credits: ILRI/ Camille Hanotte

3. CSA 2020. Agricultural Sample Survey 2019/20 [2012 E.C.]. Report on Livestock and Livestock Characteristics. Addis Ababa: Central Statistical Agency.

4. KOSMOWSKI, F., ALEMU, S., MALLIA, P., STEVENSON, J. & MACOURS, K. 2020. Shining a Brighter Light: Comprehensive Evidence on Adoption and Diffusion of CGIAR-Related Innovations. Rome: Standing Panel on Impact Assessment (SPIA).

5. Zewdie,Y. and Dessie, T. 2019. Realizing climate gains from smallholder chicken farming in Africa. Blog Post. Wageningen: CTA

SCALING INGREDIENTS ANALYSIS

Figure 1: Scaling Ingredients[6]

6. Ibid., 6

The survey results revealed several opportunities and three potential bottleneck areas in meeting the Scaling Ambition.

The most significant opportunity is knowledge and skills, whereby there is adequate capacity to use the innovation at both the individual and institutional levels. The group noted that there were appropriate training materials and methods available to allow the target group and other value chain actors to adopt and promote the innovation in the form of extension materials but noted that the materials needed to be adapted into other local languages to enhance accessibility by most producers. Also, there exists a good institutional environment in which actors would develop and improve innovation within the national and local system through partnerships. For example, local institutions were engaged in planning, designing, implementing, and evaluating of innovations at different levels.

The target groups have the necessary knowledge and skills to use the innovation in the intended way but can be enhanced through planned capacity building training on feed formulation, vaccination, and basic financial management.

The three potential bottleneck areas are — value chain, finance, and public governance.

Under the value chain, the key challenges were inadequate quality control and assurances in certification of producers, their products, and pricing, and lack of quality assurance of inputs and supplies, especially in rural and remote areas.

The survey also revealed that the relationships between different actors in the value chain resented a skewed power balance at the expense of the producers. Also, the Scaling Scan found that a lack of a formal or recognizable governance structure in the value chain impacted the value chain's performance negatively. In other words, there was the need for further development of the value chain for optimal performance that benefits everyone.

Regarding finance, the analysis revealed that some actors, for example, the resource-poor producers in the value chain, could not finance certain critical inputs to adopt the technology. The analysis also found that current financial credit products and services would exclude poor smallholder producers who lack requisite financial history and profiles to support their applications; and therefore, financing is a potential bottleneck to reaching the Scaling Ambition.

On government support for the innovation, the Scaling Scan found that there lacked a critical targeted financing policy to accelerate the innovation, specifically to ease the financial burden on producers.

CONCLUSION AND RECOMMENDATIONS

The Scan found that producers have the knowledge and skills to adopt the improved chicken breeds and practices. With additional language contextualization of the existing training materials through translation, the project can enhance adoption by farmers.

The scan identified there exists an ecosystem of actors that have worked in the value chain and that includes private players working with feeds, hatcheries, and vaccines. These actors have been part of the ACGG project from the beginning and is therefore a good opportunity for continued collaboration.

The main challenge towards reaching the Scaling Ambition of the improved chicken innovation is on identifying actions to fill the gaps in the two ingredients unfavorably scores - value chain, and finance.

Actions targeting opportunities identified and undertaken by stakeholders should help the project increase the chances of achieving the Scaling Ambition. These actions form part of a pathway towards scaling the innovation package and are summarized in the recommendations section below.

Photo credits: ILRI/Fasil Getachew

Building on existing knowledge and skills

- Expand farmers' learning options
- Lower the barriers to training access by smallholders
- Expand smallholder benefits from the extension system

Enhancing financial inclusion

- Scope and document demand for credit by smallholder chicken farmers and willingness to pay
- Facilitate the design of smallholder chicken farmer facing credit score indicators and KPIs relevant to both the farmer and target financial institutions
- Design financial literacy programs for smallholder chicken farmers that can be deployed at scale
- Create awareness on the profitability of chicken prodution among financial institutions on chicken farming to improve their understanding and support to the sector

Strengthening the value chain

- Address the quality control and quality assurance gaps on inputs
- Structure partnerships that are beneficial for everyone, including smallholder groups
- Cultivate collaboration among value chain actors

Tapping on public sector governance

- Make a case for government financial incentives targeting smallholder farmers
- Develop a strategy to influence government towards creating incentives for finance institutions to fund chicken smallholders

LIMITATIONS OF THIS SCALING SCAN

- The approach is driven primarily by expert opinion.
- The ingredient scaling survey noted by all stakeholders assumes a similar level of awareness on all the innovation components by all participants.
- This scan is limited to the light track of the ILRI Impact at Scale framework.

Overview of the scaling approach for greater impact

Scaling in projects is a process whereby an innovation (technology, product, process, or structure) reaches more people, creates greater efficiency per person, and achieves system change and sustainability.

The Scaling Scan differentiates three dimensions of interdependent scaling:[7]

1

Scaling out focuses on more significant numbers, such as replicating or rolling out a successful solution or model to new clients, beneficiaries, or geographies. Again, the objective is to significantly increase the number of people benefiting.

2

Scaling up refers to transforming institutional conditions. Significant scale can frequently only be achieved by addressing the enabling environment on the institutional level. This includes changing how the organizations and institutions function and involves policies, regulations, laws, and resource allocation to enable the performance, expansion, and sustainability of the innovation.

3

Scaling deep is changing cultural norms and changing the 'hearts and minds of people within an organization, system or community in terms of narrative, values or beliefs to implement the successful solution.

Photo credits: ILRI/ Camille Hanotte

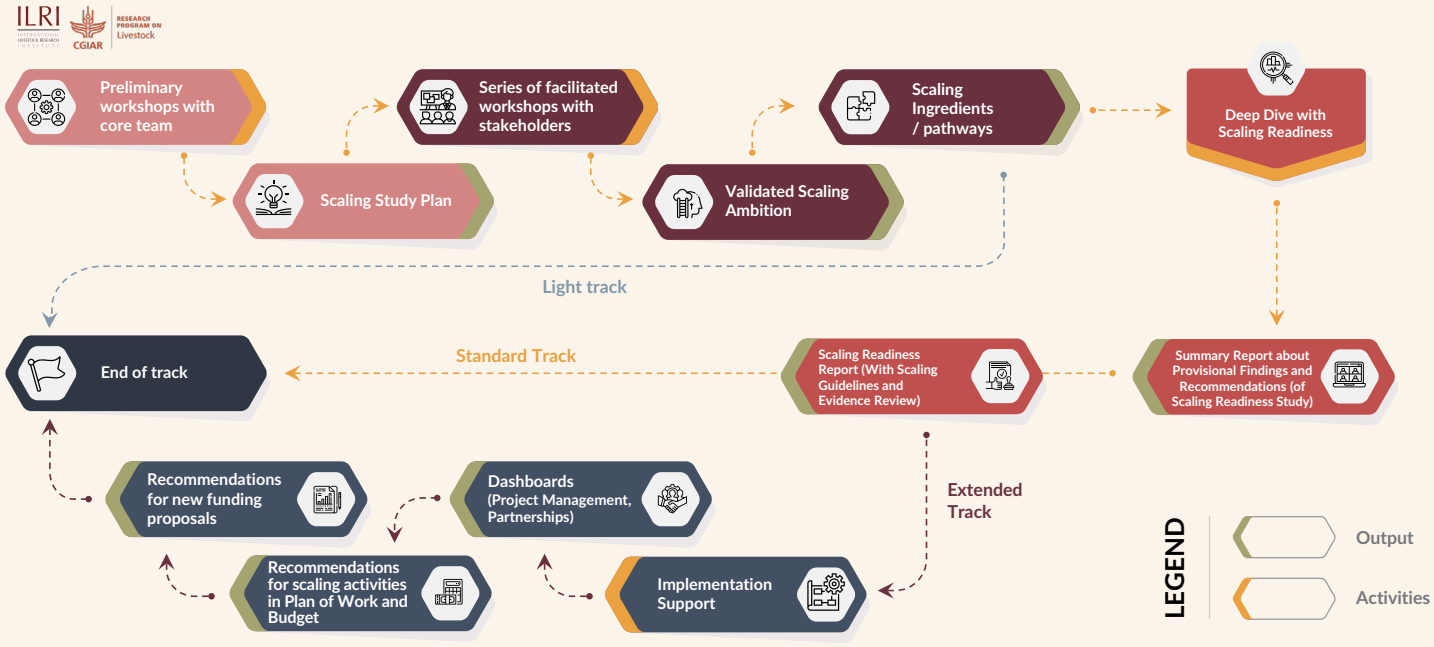
7. Scaling of innovations: 3 dimensions https://hdl.handle.net/10883/19592

ILRI's scaling work has adopted a working definition where scaling includes increasing the following:

- number of individual users of an innovation (novel products, services, technologies)
- the organizations the user is working for
- the disciplines the users belong to
- the changes the innovation contributes to
- the locations where the innovation is used
- and any other areas or fields where innovations are used

To make scaling concepts and tools more accessible to ILRI researchers and their partners, ILRI's I@S program reviewed the landscape of scaling to summarize relevant approaches and tools that livestock projects can benefit from. The objective is to provide those projects with a detailed process on how they can scale more effectively. The resulting ILRI Impact at Scale framework offers an overview of the steps and short summaries and assessments of nine tools related to scalability assessment. Figure 2 below shows the various scaling tracks (light, standard, extended) available to a project depending on the different project circumstances and preferences.

Figure 2: ILRI scaling framework



The light track is the focus of this report. It utilizes the Scaling Scan tool by the PPPLAB, and the CIMMYT centred around working with the project team to develop a Scaling Ambition and using the tool to determine strengths and weaknesses to achieve the Scaling Ambition. The tool is a ten-part survey comprising 40 questions usually scored by the project team, including stakeholders and other involved partners, to determine possible strengths and weaknesses in achieving the stated Scaling Ambition. The outputs from this track are a Scaling Study Plan, a realistic project Scaling Ambition, and Scaling Ingredients Study.

African Chicken Genetic Gains project

ACGG is an Africa-wide collaboration led by ILRI. ACGG launched in 2014. The overall goal is to improve chicken genetics and ease access to these adapted chickens by smallholder farmers to help alleviate poverty, increase production, and household animal protein intake, including empowering women farmers in rural communities. In Ethiopia, the ACGG project was implemented in select rural and peri-urban regions. The rural areas included villages in the regional states of Tigray, Amhara, Oromia, and the state of SNNP. Villages in the Addis Ababa city administration represented the peri-urban system.

The objectives as listed in the project proposal are:

1. Conduct a baseline survey to define and characterize current smallholder chicken production systems, chicken ecotypes, and current realized productivity, husbandry practices, and the socio-economic status of poor smallholder farmers in Nigeria, Tanzania, and Ethiopia.
2. Identify highly productive local African chicken germplasm from the various countries for characterization, multiplication into stable flocks, and testing on-station and on-farm.
3. Negotiate access to foreign tropically-adapted chicken germplasm (from India and elsewhere), characterize and test them under on-station and on-farm conditions under low-input production to determine productivity in different agroecology.
4. Use the information obtained from the survey and the on-station and on-farm testing to define the chicken breeds, phenotypes, and genotypes preferred by smallholder farmers in terms of bird colour, body conformation and temperament, egg and meat productivity, overall tropical adaptability under low-input production systems, and carcass and meat quality.
5. Develop stable multiplication lines (great grandparents, grandparents, and parent stock) of the farmer-preferred germplasm, and develop IP models to facilitate access to the germplasm by several private and public sector multipliers to get the improved chicks into smallholder farmers' hands.
6. Collect data and samples to evaluate and document the impact of the introduction of the imported germplasm on the diversity of indigenous chicken populations and provide strategic recommendations to inform the global efforts to conserve indigenous germplasm resources.
7. Develop and nurture national innovation platforms (IP) to facilitate private sector access to the germplasm, develop business models for mass multiplication, brooding, vaccination, and delivery to farmers, and develop value chain input delivery systems.
8. Develop and nurture community and sub-national IP focused on empowering poor smallholder farmers, especially women, to access preferred chicken germplasm and optimize the productivity of the birds under low-input production environments.

Develop a roadmap for using the data and samples collected from the on-station and on-farm germplasm testing to set up longer-term crossbreeding and chicken genetic gains programs, including the application of omics-based strategies for accelerating the rate of genetic gains under low-input tropical conditions and the development of synthetic crossbred chicken lines.

A LOOK AT THE (STEADY) JOURNEY OF THE INNOVATION TO IMPACT

ACGG, with its focus on chicken value chain transformation, has used the IP approach to help generate and mobilize farmer needs and provide a forum for farmers to engage with key actors, including those in the private sector like feed producers and vaccine suppliers. As a result, these IPs in Ethiopia matured and transformed into self-sustaining forums and have since been integrated into the Ethiopian Poultry Producers and Processors Association (EPPPA) to converge functions and efforts in the chicken value chain. The project has succeeded in training and mentoring IP facilitators to manage these forums and deal with important issues like the supply of inputs into their contexts, contribute to breed development for their ecological zones, and enhance access to advisory services. One key success of the IPs in Ethiopia is the formation of a health task force that managed to include the production of a new format of fowl typhoid and Newcastle disease vaccines in smaller packs of 50, which enhances the access to these vaccines by farmers who previously were not able to due to small flock sizes. Additionally, the project developed manuals in two local languages (Amharic, Oromo) for training farmers on the three most economically important poultry diseases. The platforms have also directly contributed to the use of local ingredients in feed formulations for chicks, growers, and layers, targeting commercial and semi-intensive and scavenging systems. This reduces the cost of feed and makes for a more environmentally friendly system. Another key achievement is in policy influence, where IPs were instrumental in the establishment of a smallholder chicken forum that provides overall strategic leadership for the forum and acts as a good

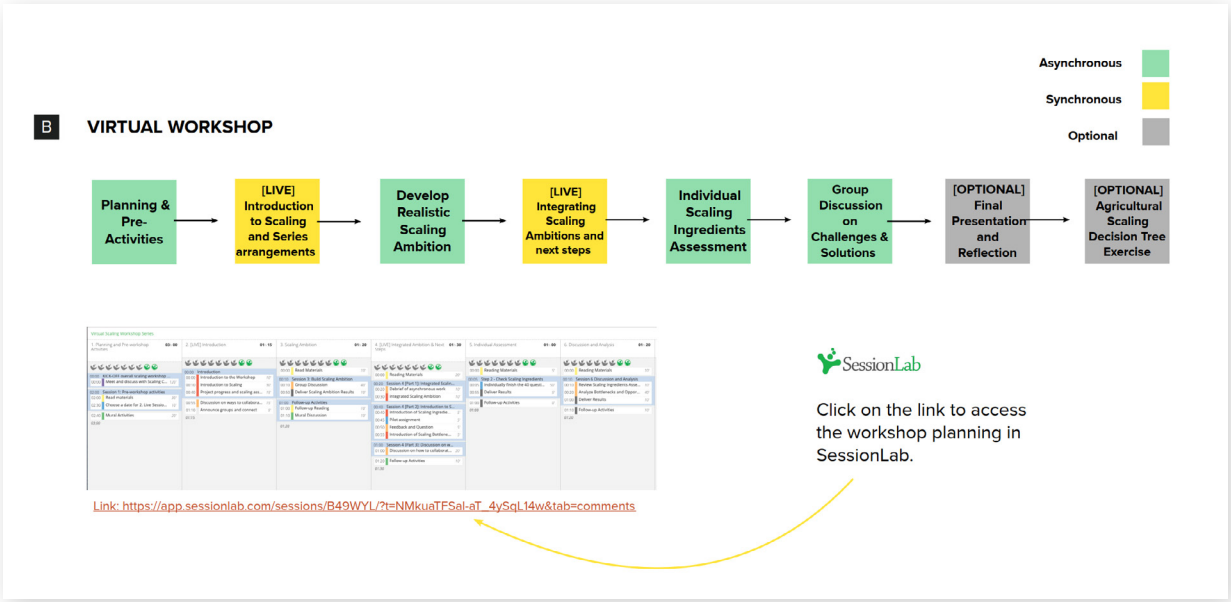
Photo credits: ILRI/ Camille Hanotte

Methods and Approach: Virtual Scaling Scan workshop series

WORKPLACE CHANGES, FORCING US TO IMPLEMENT CHANGE

With the COVID-19 pandemic spreading across the globe, 'business as usual' was no longer feasible. Governments around the world have implemented stay safe at home orders. For the I@S program at ILRI, the main question was not whether but how we would adapt our two and a half-day in-person workshop to this 'new way of working.' How could we utilize existing digital tools and solutions to keep people safe and minimize the impact on planned and future scaling work? Unfortunately, this problem was being experienced by most teams, meaning solutions were often trial and error. Nevertheless, we were hoping to achieve good results. Through this process, ILRI adopted a blended approach of engaging scaling teams in a virtual workshops series that included synchronous and asynchronous engagements, a 'Scaling Scan workshop series' to deliver the scaling assessment work.

Figure 3: I@S hybrid workshop series



REMOTE WORK: IMPLICATIONS TO OUR SCALING TEAMS AND STAKEHOLDERS

COVID-19 turned homes into offices and workshop spaces for most of our scaling work clients from early in the pandemic. For the project teams and their stakeholders, this meant converting personal home spaces into makeshift office spaces. For parents, this also meant they were now working double-duty as stay-at-home parents and remote employees. For project management teams, this change included deploying digital tools to help support the new reality for staff, partners, and stakeholders.

Remote working forced a cultural and technological shift. Some project engagements transitioned from mainly formal to informal home environments where interruptions like house repairs, homeschooling, construction, neighbours, and children playing with daily work responsibilities. For the future, we anticipate a hybrid model with the following as general implications to scaling teams and their stakeholders to participate in our hybrid Scaling Scan workshop series fully.

TIME AND LOGISTICS OF THE SCALING GROUP

The scaling group comprises the scaling coordinator, core scaling project team, scaling champion and the partners and stakeholders. The scaling coordinator is the overall scaling facilitator assigned to the group from ILRI'S I@S program. The core scaling project team comprises the key project staff who shall participate in the Scaling Scan and are led by their project leader, who, in this process, is the scaling champion. Finally, the group is completed by project partners, and stakeholders relevant to the work and whose inputs and participation are critical to scaling the project's target innovation or technology.

TIME DURATION: 5-6 weeks in absolute time dedicated to the Scaling Scan. However, the 5-6 weeks will normally be spread over a period that depends on the scaling group's availability for the synchronous and asynchronous tasks. In this case, the work began in October 2020 and concluded in June 2021.

- **(Session 0)** - One week workshop - Planning
- **(Session 1-3)** -3 weeks - Implementation + 1 week (optional sessions, flexible)
- **(Sessions 4–5)** - 2-weeks - Summary and reporting period

TOTAL TIME INVESTMENTS:

- Workshop participants: 7-9 hours in total from the beginning of the Scaling Scan process to the end
- The core project team and the scaling champion: 15-20 hours

MAIN CHANNEL: MS Teams and Zoom

DIGITAL TOOLS: Smartsheet for project management and SessionLab for workflow planning

The Scaling Scan workshop series covered key steps and produced a set of outputs under each step. The three steps of the series were as follows:

Step 1: Constructing the Scaling Ambition

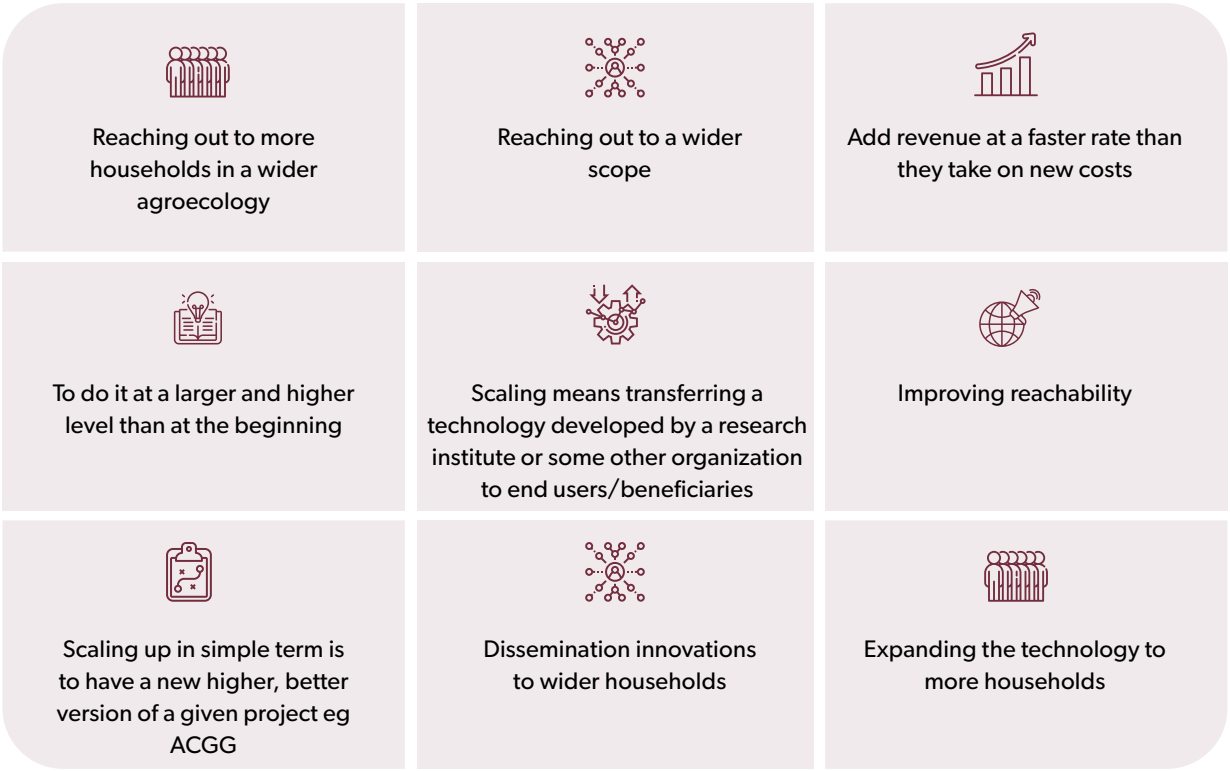
Step 2: Scaling Ingredients Survey

Step 3: Points of attention towards a scaling pathway

HOW FAMILIAR WERE ACGG PARTICIPANTS WITH SCALING?

Figure 2: Results of the meaning of scaling.

WHAT DOES "SCALING" MEAN TO YOU?



The analysis began with a familiarity exercise on the scaling topic. As shown in Figure 3 above, the results show varied understanding regarding scaling, with different definitions being distinguished by the different outcomes. The various schools of thought on scaling that came out included scaling to mean the following:

- reaching out to more households and new agroecology
- adding revenue at a faster rate than being consumed
- doing it on a more significant level than the beginning,
- improving reachability
- reaching more households

The respondents showed a biased understanding of scaling to mean reaching more numbers or new areas, a dimension in scaling referred to as 'scaling out'. The risk with such a bias is that any scaling pathway would be limited to outcomes related to more numbers and more extensive coverage areas. Effective scaling of innovations includes two other dimensions of scaling. First, scale-up looks at system-wide changes and improvements favouring the smallholder chicken value chain actors, including farmers. Scaling deep looks at norm change necessary to adopt the new genotype chicken by the value chain. The I@S scaling approach considers these different dimensions when defining the Scaling Ambition for the innovation and in the subsequent development of action points towards a scaling pathway, as we shall see in the Scaling Ambition section.

Further, respondents reported having some experience in scaling and ranked scaling to be an important aspect of their work. Asked why they would bother to scale, participants focused on outcomes and impact being realized by more households and in different agroecological areas.

Figure 5: Most participants report some experience in scaling

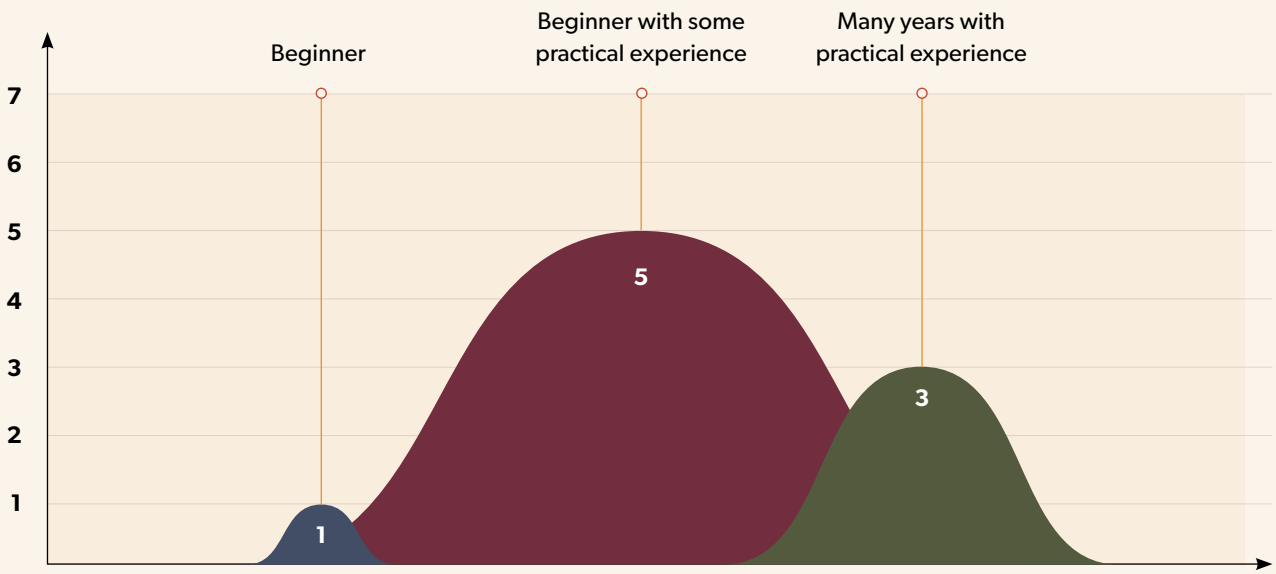
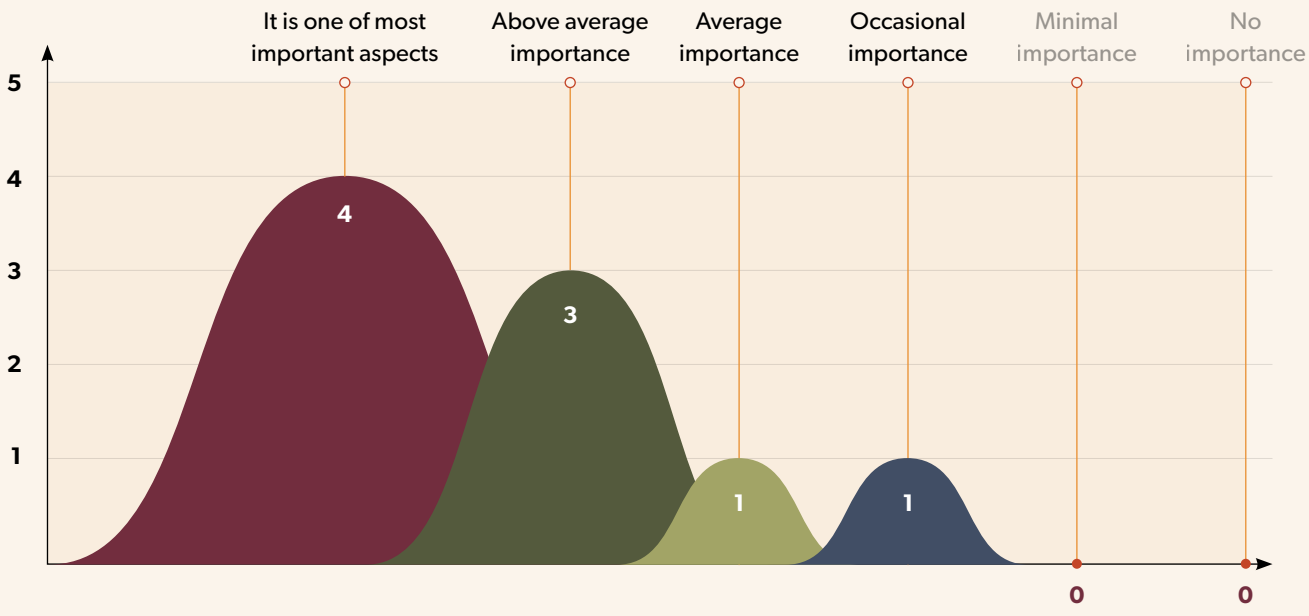


Figure 6: Scaling is important to most participants



Primary reasons given to consider scaling in the ACGG project include bringing impact to more people and increasing the number of people that adopt the ACGG innovations on chicken and therefore benefiting from the innovation with increased productivity and reduced. As the project now focused on scaling efforts, these reasons suggest a single objective to scaling but somewhat different desired outcomes benefitting target groups in different ways.

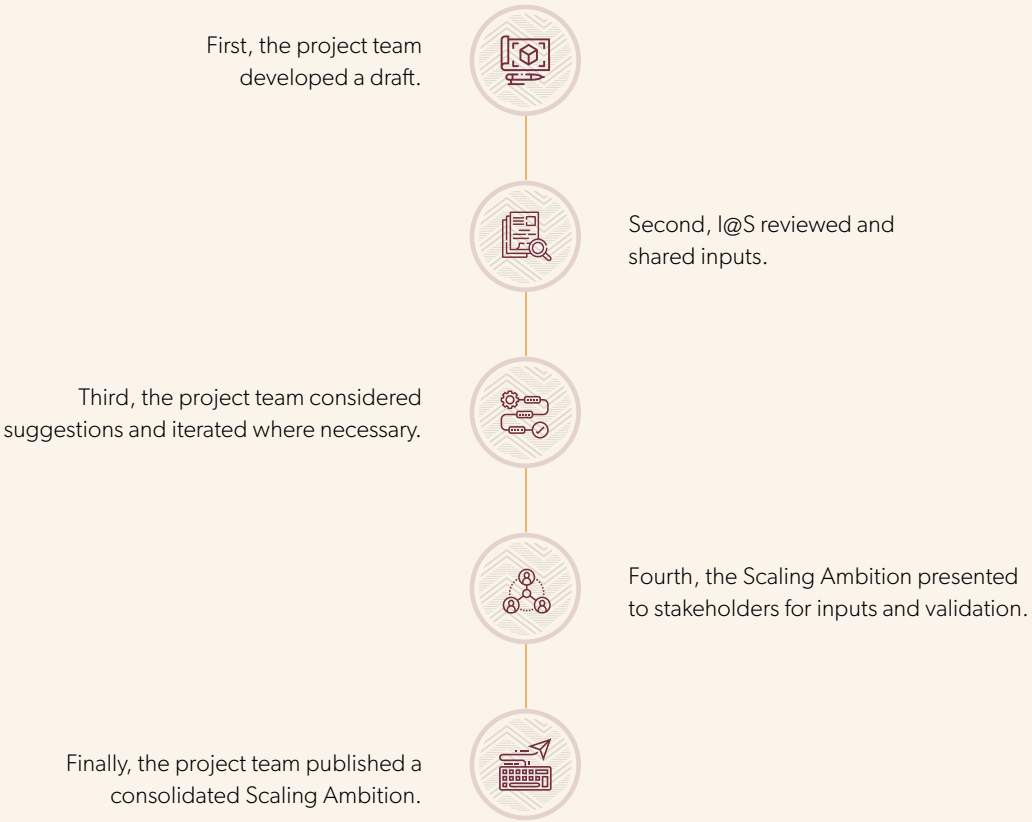
Figure 7: Reasons to pursue scaling

WHY SHOULD WE BOTHER TO SCALE?

Constructing the Scaling Ambition

What is a Scaling Ambition? Scaling Ambition is highlighted by a statement of intent by the project based on a technical framework. The I@S team works with the project team to develop a statement that defines what is being scaled, for whom, where, when, and why. Attached to this statement, it also includes additional elements that include performing a system and responsibility check to reflect on the impact of the innovation on the overall system and other social aspects like gender, age, inclusiveness, and the environment.

The Scaling Ambition construction followed the following process:



The resulting Scaling Ambition: 'By 2025, the ACGG project and partner organizations want to disseminate 120 million tropically adapted dual-purpose improved chicken breeds with an appropriate package for about 4.8 million smallholder producers in Ethiopia to improve livelihood outcomes.'

Through project reflections with the project core team, partners and stakeholders involved in the ACGG project, the consolidated Scaling Ambition further included the following domains: the innovation, target, drivers, targeted regions, capacities, system, and responsibility checks.

The innovation is the dual-purpose of genetically improved chicken breeds, brooding (mother units), vaccination and proper husbandry practices. The objective is to scale all components of the innovation as one package.

Evidence of the innovation?

- During the on-farm experiment, genetically improved chicken produced more eggs than local chicken - strain A 288.8% more, strain B 277.75% more, and strain C 271.7 % more.
- Decreased chick mortality from the genetically improved chicken
- Dual-purpose genetically improved strains preferred by 80.9% of farmers; supported by higher adoption as witnessed by private partner EthioChicken
- Value for money as a profit on marginal rate of return for 50 birds is US$1.7 for each dollar invested in dual-purpose breeds.

The innovation's primary target is smallholder producers, small-scale semi-intensive producers, and mother units. Here we can see two market segmentation in (i) egg producers, broiler/cockerel producers, and a producer of both eggs and broilers on the one hand, and (ii) smallholder vis-à-vis small-scale commercial producers on the other hand.

The drivers of this scaling process are both public and private institutions. These include public research organizations like the Ethiopia Institute of Agricultural Research (EIAR), ILRI, and the local ministry of livestock and fisheries. Private drivers include commercial producers like Ethiochicken.

There is adequate capacity to drive scaling in that the Ministry of Agriculture has an already existing and experienced extension system throughout the country. The private poultry companies have parent stocks, modern hatcheries, mother units, feed mills, well-established vaccine suppliers, experienced field officers and extension agents.

The project targets all regions of Ethiopia with the innovation and considering the different agroecology there is— highland, midland, and lowland. This implies scaling by expanding areas or more people/ km2 by an expansion of stocks and the number of producers. The Scaling Ambition targets an estimated 4.8 million holders from a pool of 8.92 million total poultry holders (CSA 2020). Currently, there are 1.76 million adopters of genetically improved chicken in Ethiopia (Kosmowski, Alemu et al. 2020). The project targets to achieve these Scaling Ambition numbers by 2025.

When constructing the Scaling Ambition, the team considered any changes that achieving this ambition might introduce and identified the main difference as transforming the low-input low-output subsistence-based traditional production system to a semi-intensive production system. On inclusiveness, the innovation through the Scaling Ambition delivers improvements in the following ways:

household incomes specifically for women, as most chickens are owned and managed by women

child and maternal nutrition and household food security

contributes to reducing poverty

creates employment opportunities for youths along the value chains through brooding, feed distribution, vaccination, production, and marketing of eggs and chicken

On equity and resilience, improved poultry production enhances women's empowerment in households. In addition, the short production cycle of dual-purpose improved breeds-based production increases rural-households resilience during households' shock events such as crop failure.

The innovation uses existing feed resources from farmers own produced grains, commercial feeds, scavenging, kitchen waste etc. Also, poultry houses can be constructed using locally available materials to minimize the impact on the environment from manufactured units. This ability to scavenge and use household waste by this innovations' chicken production leads to low environmental impact and carbon footprint compared to other livestock production (Zewdie & Dessie 2019).

Scaling Ingredients scoring

ASSESSING THE ADEQUACY OF THE SCALING SCAN APPROACH

To assess the adequacy of the current project's approach to achieve the Scaling Ambition, the I@S tea m tasked the project with partners and stakeholders to score a ten ingredients survey. Before the scoring, the I@S team took the scaling group through the tool to help clarify the ten ingredient fields assessed in the survey. This was done in a virtual workshop, after which all workshop participants were required to score the survey in small groups of about four participants.

Figure 8: Scaling ingredients

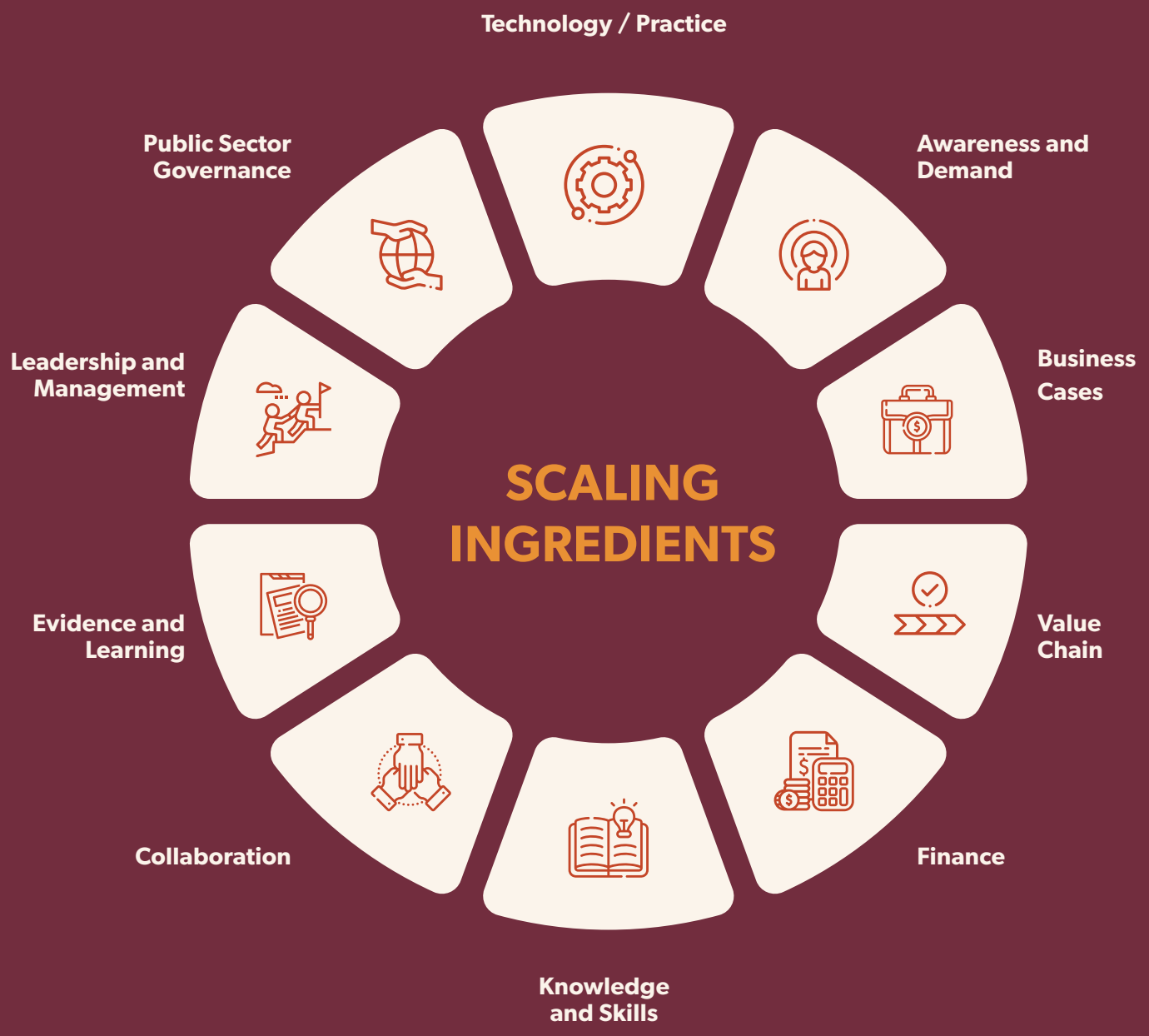



Photo credits: ILRI/ Camille Hanotte

The Likert scale rankings used were:

***1* = No, this is very uncertain OR not enough information to answer**

***2* = Serious doubts**

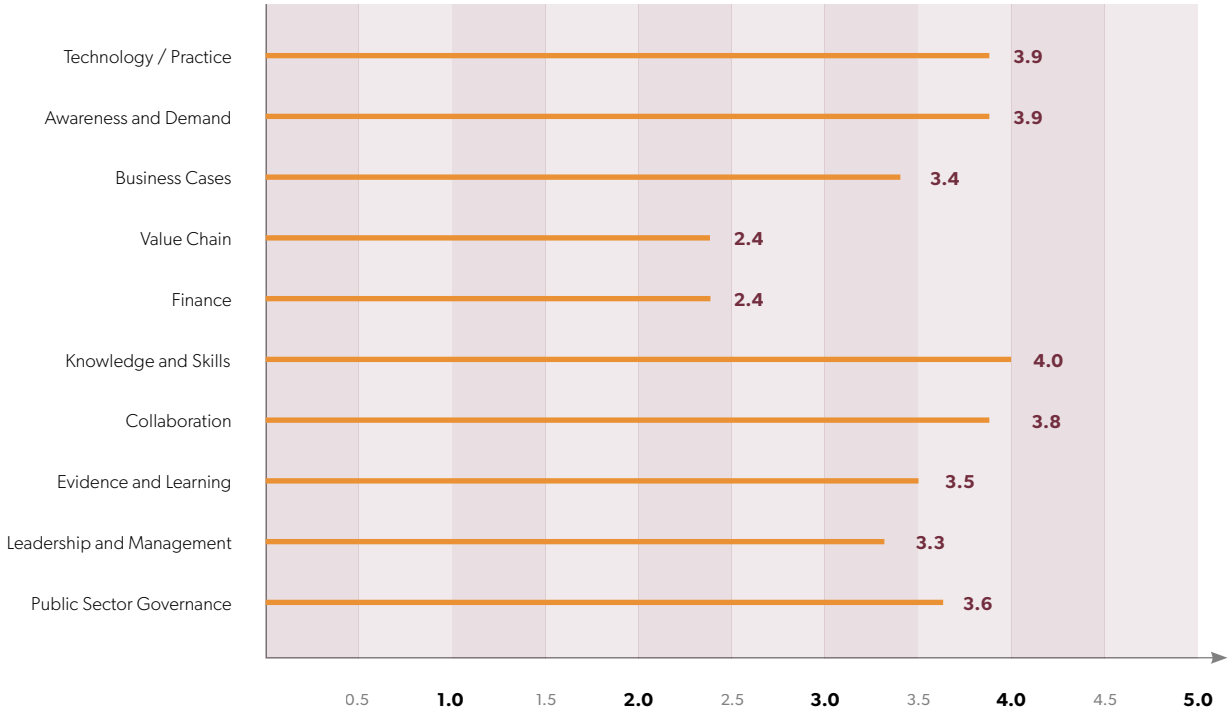
***3* = Some doubts/unsure**

***4* = Quite confident**

***5*= Yes, definitely, this is not an issue for my scaling case OR not applicable**

Effective links between actors to pursue their business case (value chain) and effective financing options for users and other value chain actors (finance) present the main potential bottlenecks to achieving the stated Scaling Ambition. In addition, public governance, specifically around the lack of policy instruments to support lending to smallholders, was cited as a bottleneck to finding lasting solutions to financing challenges experienced by the smallholders. Conversely, capacity at the individual and institutions level to use, adapt and promote innovation in the form of knowledge and skills is an opportunity for ACGG towards achieving the Scaling Ambition. From the ingredient survey, value chain and finance were the lowest scored fields at 2.4, meaning the group had serious doubts around the two areas. On the other hand, knowledge and skills were scored 4.0, meaning the group was quite confident about its prospects in helping to achieve the Scaling Ambition.

Figure 9: Scaling Ingredients results bar chart and spider diagram



Critical ingredients analysis

To assess the adequacy of the current project's approach to achieve the Scaling Ambition, the l@S tea m tasked the project with partners and stakeholders to score a ten ingredients survey. Before the scoring, the l@S team took the scaling group through the tool to help clarify the ten ingredient fields assessed in the survey. This was done in a virtual workshop, after which all workshop participants were required to score the survey in small groups of about four participants.

Figure 10: Scaling Ingredients results

	Overall score
Technology / Practice	3.9
Awareness and Demand	3.9
Business Cases	3.4
Value Chain	2.4
Finance	2.4
Knowledge and Skills	4.0
Collaboration	3.8
Evidence and Learning	3.5
Leadership and Management	3.3
Public Sector Governance	3.6

Photo credits: ILRI/Apollo Habtamu

The Scaling Ingredients survey shows how the inherent knowledge and skills stand as an opportunity to enhance the achievement of the Scaling Ambition. At the same time, value chain and finance can handicap the achievement of the Scaling Ambition. On potential bottlenecks, while only two were highlighted as main bottlenecks, a deeper dive into the scoring suggests that there are issues in the other Scaling Ingredients that require additional interrogation as they scored below average in some of the sub-ingredient's elements.

More specifically, the results pointed to seven sub-ingredient elements with a score of less than 3.0 and highlighted in red.

Figure 11: Scaling sub-ingredient results

	Question 1	Question 2	Question 3	Question 4
Technology / Practice	4.0	4.0	3.5	4.0
Awareness and Demand	4.0	3.5	4.0	4.0
Business Cases	4.0	3.0	3.5	3.0
Value Chain	2.5	2.5	3.0	1.5
Finance	2.5	2.0	3.0	2.0
Knowledge and Skills	4.0	4.0	4.0	4.0
Collaboration	4.0	3.0	4.0	4.0
Evidence and Learning	3.5	3.0	4.0	3.5
Leadership and Management	3.0	3.0	3.0	4.0
Public Sector Governance	4.0	4.0	4.0	2.5

Building on a hidden gem

Knowledge and skills (4.0): capacity to use, adapt, and promote innovation at an individual and institutional level.

Asked whether the target group has the necessary knowledge and skills to use the innovation in an intended way, the group answered in the affirmative. However, it cautioned that producers still need capacity-building efforts on feed formulation, vaccination, and basic financial management. The group also reported that there already were appropriate training materials and methods available to allow the target group and other value chain actors to adopt and promote the innovation that included extension tools. These materials, however, need to be developed in local languages to realize their full potential.

Concerning the right actors to provide and improve the training programs necessary for sustainable adoption of the innovation, the national extensions system was identified as the ideal and able structure to do that.

On the need to have an institutional environment in which actors (such as knowledge institutes) develop and improve the technology/practice within the national and local system, the observation was that the improved chicken innovation was developed through local, national, and international partnerships where local institutions were engaged in planning, designing, implementing, and evaluation of the innovation at the different levels to enable contextualization.

Achieving the Scaling Ambition: three potential bottlenecks

VALUE CHAIN: EFFECTIVE LINKS BETWEEN ACTORS TO PURSUE THEIR BUSINESS CASES

The survey looked at whether the value chain enabled the technology with the right quality, in the correct quantity, and in a timely manner. The results showed there was not a standard certification of producers, the products, and pricing. In addition, the group had serious doubts about the quality of supplies and reported frequent fluctuations in the availability of inputs, primarily affecting producers in the rural and remote areas.

The survey also found that relations between the various actors in the chain were not adequately developed and therefore needed further work. The respondents say the marketing system is not well developed. The power balance amongst actors was skewed negatively on the producers favouring the input suppliers and other marketing actors. Also linked to this market issue, the group cited little to no evidence of a formal or established governance structure for the value chain.

Still, on areas that make the value chain a potential bottleneck, the survey looked at how organized the actors were and found that producers were majorly affected by lack of organization. This negatively affected their access to inputs like vaccines that are delivered in large doses and markets.

FINANCE: NOT ONLY IS FINANCE NECESSARY FOR THE RESEARCH OR PILOT PHASE OF A PROJECT, BUT IT IS ALSO NECESSARY FOR THE SCALING PHASE, ALBEIT NOW FUNDED BY THE PARTICIPATING ACTORS.

Considering whether the target group can finance the investments in and operation of the improved chicken innovation, the groups think some resource-poor producers would struggle. The survey also looked at whether relevant financial mechanisms existed accessible and affordable for all value chain actors. The group answered negatively, especially regarding smallholder producers for whom they said the existing financial services were out of reach.

PUBLIC SECTOR GOVERNANCE: GOVERNMENT SUPPORT TO REACH THE SCALING AMBITION.

To the question of whether government financing mechanisms (such as subsidies or tariffs) were smart and could be applied to benefit scaling the innovation, the group had serious doubts that these existed.

Conclusions

The opportunities identified in the Scaling Ingredient survey indicate that the primary target of the innovation, the producers, already have fair knowledge and skills to adopt the improved chicken breeds and associated practices – innovation. Furthermore, with language contextualization, training materials can increase the adoption of improved breeds and practices. There also exists an ecosystem of actors who are well experienced and established countrywide and ready to support the innovation to scale. These include government and private extension service providers, private companies with different value chain products like hatcheries, feeds, and vaccines. The innovation was developed and tested in collaboration with all these actors and therefore provides for a collaborative innovation that is on constant improvement from the various actors already involved. To take advantage of these favourable ingredients towards reaching the stated ambition, the group suggested a few recommendations captured in the Recommendations section of this report.

For the ACGG project, the main challenge about scaling the improved chicken innovation is centred around seeing how the current gaps identified in the value chain and finance ingredients can be filled through identifying specific initiatives or actions that offer the greatest benefit. This report points to three clear imperatives to do this:

1 

The success of ACGG scaling efforts to achieve the stated ambition will require interventions targeting various issues under the value chain and finance ingredients. For the value chain, quality in the form of standard certification of producers, products, and pricing came out as a significant potential challenge to Scaling Ambition. Quality of supplies and inputs available will need attention to ensure producers in all areas have adequate access to quality inputs and supplies. The project will need to work on the relations between various actors to ensure producers do not suffer from unequal power dynamics in the value chain.

2 

The survey finds that the project needs to look at how each participating actor can finance the various practices in the innovation on the finance ingredient. This includes reflecting on current financial mechanisms and considering how these can be improved to enhance access by all actors to fund their adoption of the innovation.

3 

As financial services become more integral to businesses, including farming enterprises, there is a greater urgency for financial institutions and the government to enhance financial inclusion and ensure that no one is excluded from the socio-economic benefits of the sector. Policymakers – and other finance and agriculture sector stakeholders – must identify, measure, and address a range of enablers to financial inclusion. As such, they need to understand where to focus on driving increases in finance products uptake by smallholders.

Recommendations

Building on existing knowledge and skills

1. Design (or adapt existing) tailored capability-building programs that focus on feed formulation, vaccines, and financial management, linked to a certification program. In addition, consider existing approaches that will aid delivery of this domain, e.g. digital applications and solutions.

2. Translate existing training materials into local language/s to enhance access by smallholders and other actors.

3. Harness existing extension structures to deliver training and thus expand smallholder (and other actors') benefits from the extension system.

Enhancing financial inclusion

4. Undertake a scoping study to document the demand for financial credit products to fund chicken smallholding enterprises and their willingness to pay.

5. Facilitate the designing of financial credit products with a smallholder-client lens. These include creating innovative financial packages for smallholder poultry producers, e.g. tailored credit scores and loans to farmers on feeds, birds, vaccines etc.

6. Develop poultry data monitoring methods that track farmer performance through KPIs meaningful to finance institutions.

7. Develop financial literacy programs for poultry smallholder farmers

8. Develop chicken farming literacy programs for financial institutions to increase their understanding of the value chain, design assessment and financial KPIs specific for the value chain

Strengthening the value chain

9. Study the value chain to identify the underlying reasons for current gaps in quality control and assurance of inputs to aid in developing measures necessary to solve the identified issue.

10. Document a value proposition for smallholders being in organized and formal groups.

11. Engage all actors in the value chain for ideas on nurturing a power balance that favours strengthening and improving the value chain as a whole and not just a few actors.

Tapping public sector governance

12. Facilitate creating a specific lobby group for policy on poultry incentives products by the government, drawing lessons from examples in other similar contexts.

Limitations of this light scan

- To ensure representation beyond the project team, the Scaling Scan solicited participation from external stakeholders working in the value chain, ensuring that both public and private actors are part of the process and contribute to the key sessions of the process as experts. This approach, therefore, relies majorly on evidence from the opinions of experts, which ranks lowest on the hierarchy of evidence ratings.

- The Scaling Ingredient survey is a lengthy survey of 40 questions structured into ten fields that the participant and group complete. The survey assumes the individual filling the survey is knowledgeable on the ten ingredients' fields, which is not always the case.

- ILRI's scaling framework includes a light track, standard track, and extended track. This report is limited in that it only accounts for the light track. The project has also undertaken a Scaling Readiness Study , the extended track, and additional insights on the scaling of the dual-purpose chicken can be found there.

Photo credits: ILRI/ Camille Hanotte

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

The International Livestock Research Institute (ILRI) works to improve food security and reduce poverty in deve loping countries through research for better and more sustainable use of livestock. ILRI is a member of the CGIAR Consortium, a global research partnership of 15 centres working with many partners for a food-secure future. ILRI has t two main campuses in East Africa and other hubs in East, West and Southern Africa and South, Southeast and East Asia. ilri.org

CGIAR RESEARCH PROGRAM ON Livestock

CGIAR is a global agricultural research partnership for a food-secure future. Its science is carried out by 15 research centres that are members of the CGIAR Consortium in collaboration with hundreds of partner organizations. cgiar.org