

Training of animal performance recording agents on field data collection tools and data platform in Kampala Uganda

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INITIATIVE ON
Sustainable Animal
Productivity



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Introduction

Project overview

Funded by the Bill & Melinda Gates Foundation and initiated in November 2016 by the International Livestock Research Institute (ILRI) and partners, the African Dairy Genetic Gains (ADGG) program seeks to bridge the gap in information systems, productive performance, and genomic information for dairy farming systems in Africa. The program is supporting a farmer-focused partnership in Uganda. The data generated will be synthesized and used by farmers to manage their herds and improve cow management, leading to sustained animal and herd productivity gains, as well as increased smallholder dairy farmer incomes. The resulting genetic gains will potentially increase productivity and profitability, hence transforming the lives of millions of dairy families across the country.

The goal is to have working systems based on public-private partnerships that have a clear route to long-term sustainability in the next three-to-five-year period, while the ADGG's vision is to see that Ugandan smallholder dairy farmers are continuously accessing more productive dairy genetics, breeding and farmer education services and other related input services enabling their farming enterprises to be profitable and competitive businesses. Building upon these outcomes, ADGG will establish national Dairy Performance Recording Centres (DPRC), equipped with digital data capture and farmer-feedback systems. In Uganda, ADGG is being implemented in partnership with the National Animal Genetic Resource Centre and Data Bank (NAGRC&DB), Entebbe, as the implement partner given its national mandate of spearheading all livestock breeding activities in Uganda. The project has contracted performance recording agents (PRAs) through NAGRC&DB to collate dairy productivity data and support farmers to improve their dairy management system in order to increase productivity. PRAs will visit each farmer once in a month in a specified area and relay data collated to the ADGG data platform using the various data capture tools developed through the ADGG Project. The data collated will be mirrored on the servers of the Dairy Performance Recording Center (DPRC) in Uganda that is managed by NAGRC&DB.

Objectives of the training workshop

From the 18-23 July 2022, ADGG organized a training workshop for the PRAs working with the project in Uganda with the goal of:

1. Sensitizing them and other stakeholders on the objectives and vision of the ADGG project
2. Training the PRAs on data capture tools and E-learning tools and processes developed under ADGG project.

Selection criteria for performance recording agents (PRAs)

To ensure future continuity of interventions in communities and promotion of practices and breed-types for improved productivity, it is critical that activities are implemented in partnership with locally based extension service providers in the country. Their capacity to implement livestock management strategies should also be enhanced.

Personnel selection was done in consultation with the various stakeholders involved in the input supplies especially in artificial insemination (AI) and extension work to dairy farmers. All participants selected were artificial inseminators who are familiar with dairy farmers practices. To ensure undivided attention and concentration on the duty assignments, private input suppliers were selected based on their performance in their respective districts. These are districts selected for the ADGG pilot exercise in the milk shed of Uganda that is dominated by small-, medium- and some large-scale dairy farmers.

Courtesy call to NAGRC and ILRI-Uganda offices

During the training workshop, the ADDG team visited NAGRC&DB and interacted with team there. Their discussions focused on:

- the evaluation of sires used by the farmers and productivity of their daughters,
- lifting of historic data for NAGRC&DB dairy farms,
- Familiarizing the trainee team with the large-scale farms (LSF) interphase, challenges, insights, and areas of improvement.
- Appreciating the role of the herd management tool in generating analytics in real time. Previously the centre was storing data in excel sheets as the inter-herd system was not sustainable. The team also visited the National Bull Stud.

The team then paid a courtesy call to ILRI office in Uganda and briefed the regional head on the ongoing ADGG activities in the country. This was critical for coordination of the new CGIAR Initiative on Sustainable Animal Productivity or SAPLING, which the Ugandan ADGG work is part of. The ADGG team agreed to work with ILRI-Uganda in planning, mobilizing, and implementing of all project activities, to fully exploit the potential synergies, especially those related to feeding; herd health, policy and institutional-related research to contribute to livestock genetic gains.

Photo 1: Course participants (Jenifer and Christopher).



Table 1: Number of participants trained

Affiliation	Number
Service providers (PRAs from target districts)	15
NAGRC&DB	5
ILRI	1
Total	21

Course content

The training was started off by Christopher Mukasa, the ADGG Uganda project coordinator, who welcomed the participants to the training and gave his opening remarks. After agenda setting and introduction of the training objectives, the participants used a Mentimeter exercise to share and assess their expectations from the training. The participants were sensitized on the following:

- Objectives and vision of ADGG project
- The ADGG data platform
- Achievements of ADGG in Tanzania and Ethiopia
- Crowdsourcing data through digital platforms and genomic tools to accelerate on-farm genetic gains to achieve adapted and genetically superior seed animals for local production systems.
- Use of the data and information gathered on the platforms to generate solid evidence.
- The impact of long-term and sustained genetic gains to the dairy sector.
- The Sustainability Model

- Valuable extension to farmers and expected benefits.
- Data-informed farmer feedback

The participants were thereafter trained on the use of data capture tools developed by the project.

1. Open Data Kit (ODK)

A Mentimeter then indicated the participants' knowledge and experience with using ODK. Majority of the participants had basic knowledge of it. An overview of the ODK application as a tool for data collection was presented with emphasis on:

- The ODK framework
- Data types collected and constraints for quality data collection.
- Device configurations and installation
- Filling in data, submissions, and tool updates
- Customizing ODK environment for use
- Common errors encountered by users and how to manage them.

After successful configurations, the participants were provided with tablets for practical interactions and simulations on the ADGG ODK form. The participants were walked through collection of data on all the modules. During the training the importance of collecting each data point was discussed and implications of missing out the different types of information was emphasized. Every data point is important and is used in deriving other important variables that are key in making scientific inferences. This makes the basis of informed farmer feedback based on data collected in the farm. The importance of animal identification was also emphasized for monitoring the animals. As agents of change, the PRAs were urged to engage farmers in objective discussions on the importance of animal identification.

2. Large- and medium-scale interfaces

The participants were introduced to the web-based application customized as a self-service tool to support herd management in addition to centralized data management. The integration of the different tools in collating data into the ADGG data base was explained. The modules covered included:

- Login to the interface
- Navigation around the different features of the app
- The use of action lists e.g., service, pregnancy diagnosis, calving etc.
- The analytics that provide summaries /overview of the farm at a glance.
- Batch uploading
- Use of data to make informed herd management decisions.

Materials developed by the NAGRC&DB team were used as training samples. These included insemination cards, milk record cards, animal health cards and a universal calendar. A Mentimeter exercises were used to assess understanding of concepts by the trainees before and after training. The team was informed of alternative collection of data implemented in Tanzania and Ethiopia in collaboration the iCow ecosystem. Solid discussions of how this could also be rolled out in Uganda then followed.

E-learning tools

As agents of change, the PRAs were tasked to add value to farmers through extension of the best practices for sustainable gains. The participants were equipped with e-learning tools developed through the project. These are valuable resources that the service providers will use in their extension. Each service provider would help their target farmers in the simple registration and use of the e-tools. The tools shared cover calving, dairy herd hygiene and raising healthy calves.

1. Dairy profitability tool

Majority of the farmers are not keen on evaluating their dairy enterprises and profits are always elusive. The project has developed a tool that farmers should use to evaluate their enterprises. The PRAs were urged to engage their target farmers on the use of the tool and to use it to simulate different scenarios i.e., what would the profits be if farmers increase the volume of milk, explore other incomes (e.g., raising breeding stock, monitoring calving intervals and days in milk). The training materials used are annexed at the end of this report.

2. Field work experience

After successive sessions of training, the participants visited three farms i.e., small-scale, medium-scale, and large-scale dairy farms in Wakiso District to test their familiarity and understanding of the tools. Each enumerator (PRA) had a chance to either register a farm, milk recording, body weight measurements and scoring, insemination etc. During the review sessions the following was reported:

- Farmers had adopted the culture of keeping records. However, there was need to streamline the record keeping. The importance of individual animal recording to monitor individual productivity was emphasized. PRAs would use historical data before embarking on monthly monitoring.
- The farmers had invested in animal identification for a large proportion of their herds. However, they were urged to invest in identification of remaining animals as this would be critical for monitoring and genetic evaluations.
- It was observed that farmers were not keen on quantifying the amount of feed and records related to feeds. This was a critical gap as feeds are a factor of productivity. Additionally, they were not keen on body weight measurements. They were provided with ADGG branded tapes that would help them record animal body measurements. Farmers who already had their tapes enquired why the project tapes were not calibrated into weight.

Way forward

- NAGRC&DB will print templates of interfaces for medium- and large-scale farmers to enable batch uploads.
- NAGRC&DB will print milk recording charts and AI service cards and provide them to farmers for prior recording of information that will be used by the PRAs during the month monitoring.
- The contracting of the PRAs will be expedited so they can start for data collection by August 2022.
- Participants to share requisite documents.
- NAGRC&DB to support the PRAs will fast track copying of historic records.

Conclusion and recommendations

The training workshop ended at 5 p.m. on 23 July 2022. The closing remarks, on behalf of the executive director of NAGRC&DB was done by the national coordinator. PRAs performance reports will be sent weekly to the national platform to monitor progress.

Annexes

1. Participant lists

Name	District
Kyazze Moses	Buikwe
Apollo tweshengyereze	Kiruhura
Muhairwe Guardison	Kiruhura
Mujuzi Ronald	Wakiso
Kalema Jolly	Wakiso
Muwonge Yasin	Mityana
Kimbowa Dickson	Luwero
Nasasira Norman	Mbarara
Mayanja Moses	Mpigi
Lubega Joseph	Masaka
Ssemujju Davis	Luwero
Tebesigwa Daniel	Mukono
Kaaku Thomas	Iganga
Nuwagaba Ambrose	Kabarole/Fortpotal
Wasenda Robert	Iganga
Chris Mukhasa	NAGRC
Jennifer Gitau	ILRI
Barnet Abayo	NAGRC
Brian Kabagambe	NAGRC
Thomas Kaaku	NAGRC
Lwanga Dimdiri	NAGRC

2. Training program

African Dairy Genetic Gain (ADGG) Project

Training of service providers on data capture tools

Tick Hotel, Uganda
19-23 July 2021

Day 1		
Time	Session	Facilitator
0830 – 0900	Registration	
0900 – 0930	Introductions and scene setting	Chris/Jennifer
0930 - 1030	Overview of the project goals and objectives	Chris/Jennifer
0930 - 1030	Introduction to ODK	Jennifer
1030 – 1100	Health break	
1100 – 1300	Module 1: Registration Activities	Jennifer
	✓ New farmer registration	
	✓ Household members (Partial and full Demographics)	
	✓ Cattle registration	
1300-1400	Lunch break	
1400 – 1700	Module 2: Cattle management/Monitoring	Jennifer
1700-1730	Health break	
	Day 2	
0830 – 0900	Reflections on day 1	
0900 - 1030	Module 3: Farm Management	Jennifer
	Milk utilization and improved fodder adoption and farmer groups	
1030 – 1100	Health break	
1100 – 1300	Module 3: General Farm Details-Resources supporting Dairy enterprise	Chris/Jennifer
1300 – 1400	Lunch break	
1400 – 1630	Large and medium scale interphase	Jennifer/Barnet
1630 – 1700	Health break	
	Day 3	
0900 – 1300	Field visit for practical demonstration on Modules	
0900 – 1300	Field visit for practical demonstration on Modules	
	Day 4	
0900 – 1030	Recap of field activities	Chris
1000 – 1030	Health Break	
0900 – 1030	Recap of field activities and addressing any technical issues	Chris/Jennifer
1100 – 1230	E learning tools	Jennifer
1230 – 1300	Wrap-up and closure of the training	Chris
1300 – 1400	Lunch break	

3. Training materials

<https://hdl.handle.net/10568/128305>

<https://hdl.handle.net/10568/128304>

<https://hdl.handle.net/10568/128301>

<https://hdl.handle.net/10568/127292>

<https://hdl.handle.net/10568/108942>



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CGIAR's Sustainable Animal Productivity for Livelihoods, Nutrition and Gender inclusion (SAPLING) is working in seven countries focusing on livestock value chains to package and scale out tried-and-tested, as well as new, innovations in livestock health, genetics, feed and market systems. SAPLING aims to demonstrate that improvements in livestock productivity can offer a triple win: generating improved livelihoods and nutritional outcomes; contributing to women's empowerment; and, reducing impacts on climate and the environment. Its seven focus countries are Ethiopia, Kenya, Mali, Nepal, Tanzania, Uganda and Vietnam.

