

Smallholder farmers in Kenya used improved chicken breeds and management practices promoted by SAPLING

Poultry value chain



INITIATIVE ON
Sustainable Animal
Productivity

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2024



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Acknowledgements

This work was conducted as part of the CGIAR Initiative on Sustainable Animal Productivity for Livelihoods, Nutrition and Gender Inclusion (SAPLING). CGIAR research is supported by contributions to the CGIAR Trust Fund. CGIAR is a global research partnership for a food-secure future dedicated to transforming food, land, and water systems in a climate crisis.

Introduction

This report highlights observed immediate outcomes on chicken SAPLING activities in Kenya. The research for development activities in Kenya includes identifying and promoting productive and tropically adapted poultry breeds, including socioeconomic and nutrition-sensitive interventions at the smallholder level. The identification and promotion of productive and tropically adapted poultry breeds in Kenya are implemented in Kakamega and Bomet counties. Three chicken strains will be tested in two counties to scale lessons from previous activities with additional intervention packages. The performance of identified tropically adapted improved breeds with various flock sizes (25, 50 and 75) will be evaluated, and a business model for future scaling and promotion efforts will be developed. The growth and egg production performance and the economic and technical feasibility of keeping different flock sizes will be evaluated for the identified breeds (strains) across different geographies. Brooded and vaccinated chicks at 30 days of age will be disseminated to on-farm households in the two chosen SAPLING counties. In addition to chicks, smallholder farmers will be linked with other inputs and service providers such as feed, health, and advisory services. The male chickens will be evaluated on body weight until 18 weeks of age, while the females will be evaluated on body weight and egg production performance until 72 weeks. Longitudinal data will be collected for a maximum of 18 weeks for males and 72 weeks for females. Since its inception, several milestones have been achieved that drive the initiative's activities towards meeting its intended objectives.

A nutrition-sensitive intervention that aims to enhance the consumption of chicken meat and eggs and improve the nutritional status of smallholder farmers, most notably under-five children, lactating mothers, and pregnant women, will be embedded in the existing on-farm chicken performance testing program. Integrated nutrition education will be provided to smallholder farmers using digital and paper-based nutrition education tools. The integrated nutrition education package will have different contents suitable for smallholder farmers. Baseline and end-line data will be collected to explore the impact of the interventions.

Outcome

Households adopting improved production practices

After an awareness creation of the proposed project activities, a total of **216 (159 females and 57 males)** households agreed to participate in the on-farm performance testing (Table 1). Training on improved chicken management practices was provided to these households, including the expected duties and responsibilities during the testing of these breeds. SAPLING provided these households with three breeds of dual-purpose chicken (Kalro, Kuroiler, and Sasso). A household received one chicken breed. These households contributed to the project by adopting the recommended improved production practices, including providing better housing, feeds, vaccinations, and security. Since farmers received different numbers of chicks, an average of fifty is assumed. SAPLING incurred the cost of buying the chicks, brooding, and distributing them to project households at the expense of Kes–500 per chick.

Table 1: Number of households that participated in the on-farm experiment and adopted improved production practices by county

County	Ward	Female	Male	Grand Total
Bomet	Kobolwo	34	2	36
Bomet	Kongasis	30	6	36
Bomet	Longisa	34	2	36
Kakamega	Matungu	14	22	36
Kakamega	Mumias East	20	16	36
Kakamega	Shinyalu	27	9	36
	Grand Total	159	57	216

On the other hand, each household contributed to the SAPLING initiative in several ways to maintain the chickens on their farms. On the farmers' contribution, housing is taken as a fixed cost, and it is estimated that each farmer spent KES 5,000 for sheltering the chicken. This is either in shared space or in chicken houses that they made exclusively for the project chicken. Additionally, each farmer spends KES 10 per chicken daily on supplementary feed in the semi-savaging environment where the chickens are kept. This means that each farmer/project household spends KES 250 to feed the chicken (assuming that only 25 hens are kept in the farm for egg production and the remaining 25 cocks are sold at about 20 weeks of age). In general, each household, on average, spent KES 96,250 annually (KES 5000+ KES 250 x 365 days), a total household contribution of KES 20, 790, 000 (~**USD 134, 912.39**)¹ (1 USD= 154.1 KES).

Moreover, a section of farmers in Kakamega under the Agro Kenya group are incorporating an innovative way to produce black soldier flies (BSF) to feed their chickens. In this initiative, the farmers identified a standard production unit where the BSF is produced. Smallholder farmers buy one Kilogram of young BSF larvae and feed them on waste for two weeks. By the end of two weeks, the BSF will have grown to ten Kilograms. At this point, the farmer can feed his chicken and sell the larvae to other farmers or the production unit for the production of BSF eggs. The unique aspect is that the smallholder farmer uses a trough to produce the 10 Kg of BSF (see Figure 1 below).

This initiative has created a business opportunity for trough makers, BSF-producing units, capacity building on BSF production, and a ready market for mature BSF larvae for BSF production.

¹ The exchange rate used here was estimated from December daily exchange rate reported by Central Bank of Kenya: <https://www.centralbank.go.ke/rates/forex-exchange-rates/>
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Figure 1: A simple BSF larvae production trough with chicken feeding in it.

Murhanda Cooperative in Kakamega, who are also beneficiaries of the chicken intervention, are using veterinary graduates among themselves to administer vaccines to the project participating farmers. The cooperative buys vaccines from the members' contributions and ensures that all chickens are vaccinated on time.

In-kind contribution of researchers and development partners

Considering the significant socioeconomic contribution of SAPLING interventions in the country, researchers from KALRO, local development experts, and policymakers support the initiative's activities. On average, five researchers have been supporting in the previous 12 months, investing about 32 hours per month per researcher, equivalent to KES 56,000 per researcher, a total of KES 280000 (~**USD 1817.002**). Moreover, local development experts invest about 15 hours monthly to support activities. Below is a summary of some activities carried out with partners at different levels of project management.

Table 1: Activities carried out with partners at different levels of project management

Name	Role	Contribution
AgroKenya	Farmer Organization	Provision of households
LianFam (mothering unit)		
Boresha Farm	Mothering unit	Brooding of chicks
Farming Systems		Provision of farmer
Winwill Enterprises	mothering Unit	Brooding of chicks
Silverlands (hatchery)		Hatching of SASSO chicks
Kukuchick Limited	Hatchery	Hatching of Kuroiler chicks
County Government	Local government	Performance testing sites
County Government	Local government	Performance testing sites

Investment by the private sector (mother units)

The project procured 12,000 chicks to be brooded by mothering units before distribution to project households. The cost of brooding one chick was KES 150. In this case, the mothering units invested in KES 1,800,000 (**~USD 11680.03**) in handling the chicks during brooding. This was in addition to providing useful data on the profitability and survivability of chicks in the mothering units.



Figure 2: One of the chicks brooding unit

Partners

The key partners for the on-farm chicken performance testing and interventions at the school feeding program include the Kenya Agricultural and Livestock Research Organization (KARLO), the Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALFC), the Kenya Institute for Public Policy Research and Analysis (KIPPRA), Kenya Poultry Farmers Association (KEPOFA), AgroKenya, LianFam (mothering unit), Boresha Farm Farming Systems, Winwill Enterprises, Silverlands (Hatchery), Kukuchick Limited Local government / DVS, Universities, private feed processors/companies; Private vaccine, drug, and equipment suppliers).

Next steps

- Provide extension and advisory services to smallholder farmers through different platforms.
- Collect chicken performance testing data up to 72 weeks of chicken age
- Strengthen smallholder farmers' linkage with the inputs and outputs market
- Promote the introduced breeds to other smallholder farmers in the provinces and outside the province
- Promote the consumption of chicken meat and eggs in rural farm households
- Evaluate the performance of chicken, technical and economic feasibilities, and nutritional contributions using appropriate methodologies

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We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders.

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