

A new chicken breed brings winged hope to Africa

February 6 2015, by Richard Harth



A hybrid chicken from India known as a Kuroiler has been a very popular option for Ugandan farmers due to its ability to outperform indigenous varieties, providing more meat and eggs under rural scavenging conditions. Credit: The Biodesign Institute at Arizona State University

In Uganda – as in most African countries – more than 85 percent of families live in rural village conditions, where small-scale backyard poultry operations are ubiquitous.

In addition to providing sustenance, the birds can help residents achieve economic and social independence in areas often plagued by cycles of

impoverishment and deprivation. This is particularly true for village women – traditional keepers of the flocks.

Unfortunately, chicken breeds indigenous to Uganda often perform poorly under harsh rural conditions, leaving families struggling to make ends meet financially and failing to adequately supply their basic dietary needs.

Jagdev Sharma, a researcher at Arizona State University's Biodesign Institute, has been working to enhance the power of poultry in Uganda. His project centers on the introduction of a hybrid chicken from India known as a Kuroiler. The bird's ability to outperform indigenous varieties, providing more meat and eggs under rural scavenging conditions makes it a highly attractive option.

The initiative has already shown great promise in Uganda, providing hope to village families. "Kuroiler chickens have become very popular among farmers in Uganda," Sharma says. "The demand for these chickens continues to rise."

Toward a sustainable model

Recently, the Bill and Melinda Gates Foundation approved a \$1.4 million supplement to fund the Ugandan Kuroiler project through spring 2016. Efficient breeding and distribution of Kuroilers across Uganda will enable the thriving project to be self-sustaining at the conclusion of the 18-month funding cycle.

Drawing on the success of the Ugandan example, the Gates Foundation is additionally funding a comprehensive, \$11 million plan, headquartered at the International Livestock Research Institute, Kenya. During this five-year project, the performance of Kuroilers will be compared with native chicken breeds in Ethiopia, Tanzania and Nigeria.

[Evolution of the Kuroiler Chicken Project Jagdev Sharma](#) from [Biodesign Institute at ASU](#) on [Vimeo](#).

Following this regional survey, the chickens found to be best adapted to regional conditions will then be supplied to village farmers. Sharma is confident the newly introduced Kuroilers will outperform their indigenous competitors, setting the stage for a significant geographic expansion of the project.

Chickens represent an efficient and sustainable resource, helping villagers meet increasing food demands, as well as providing rural women with a source of income, improving their social standing and overall quality of life. Indigenous Ugandan hens however, produce just 20 to 40 eggs per year, with a typical male chicken weighing in at around 1.5 to 2 kg after nine to 12 months of growth.

The native birds are also unvaccinated and prone to diseases, which often claim around 40 percent of a flock. Given that Ugandan chicken flocks typically consist of just five to 20 chickens, the failure of traditional varieties to meet basic nutritional and economic needs of village families is common. Many efforts over the years have attempted to address this problem, though until recently, results have been poor.

A better bird

Kuroiler chickens are different. The hearty hybrids have been thriving in village flocks in India, where they were first developed, for over 15 years. Kuroilers are high-efficiency scavengers that can be used for both meat and egg production. Kuroilers closely resemble indigenous chickens, yet produce five times the number of eggs per year (150-200 versus 40) and attain almost twice the body weight (3.5 kg versus 2 kg) in less than half the time of indigenous backyard chickens. Kuroilers are

vaccinated at hatch, greatly reducing disease-related mortality.

Prior to the current phase of the project, Kuroiler chickens were assessed in village settings in Uganda in a pilot study and compared with native chickens under identical scavenging conditions. Kuroilers easily coexisted with local birds but outpaced their native counterparts in egg and meat production and experienced low rates of mortality.

By summer 2014, nearly half a million Kuroilers had been distributed to rural farmers in Uganda. In the distribution phase, day-old Kuroiler chicks are sent from the National Animal Genetic Resources Center and Data Bank in Entebbe, Uganda, to farmer-owned brooding stations, known as "mother units." Here, they are vaccinated against common afflictions, including Newcastle disease, which is the most deadly disease prevalent in Africa.

At three weeks of age, the brooded chicks are ready to be sold to village farmers in 52 districts in Uganda. The new program under way promises to expand Kuroiler distribution to additional districts.

Think globally, act locally

As Sharma notes, the original Kuroiler distribution system for Uganda involved the importation of either Kuroiler eggs or day-old chicks from India. Under the new scheme however, a parent flock will be maintained in Uganda and all production will occur locally, improving efficiency, survivability and cost.

During the new supplemental funding period, a large parent flock will help produce approximately 1.5 million chickens for distribution, thereby serving many more poor rural households. Once the effort has reached full sustainability, local entrepreneurs will produce some 2 million Kuroiler chickens annually.

On Jan. 30, 2015, the first batch of the Kuroiler breeding stock arrived in Uganda. Subsequent breeding stock inductions will occur every four months. After about six months, the team expects to produce 15-20 thousand Kuroilers weekly through the duration of the 18-month supplement.

To accomplish this ambitious goal, a public-private partnership has been established with Chick Masters Limited, an independent poultry producer, located near Kampala. In year three of the project, they will produce 500,000 day-old chicks, increasing production to 1 million in year four.

The project also provides for extension and training services, including training owners of mother units in proper procedures for brooding and vaccinating [chickens](#); training farmers on techniques for maintaining healthy backyard poultry; record keeping; and disease management, including instructions for necessary steps in the event of a disease outbreak. Local poultry veterinarians will also be retained to provide diagnostic services to farmers.

Lifting lives

The economics of the project are compelling, offering radical reductions in the costs of chicken production. Currently, day-old chicks are available through the Ugandan government for around a dollar each. According to estimates, the project's independent producer will manage to cut the expense to rural farmers to around six cents per day-old chick, making Kuroilers available to many more impoverished villagers. This will encourage others to become involved in poultry production and distribution, increasing the number of mother units and greatly expanding marketing networks.

To fully achieve the goals of the project, which include the

empowerment of African women, a broad educational effort is designed to accompany the successful introduction of Kuroilers into the rural economy. During the first two years, community workshops were held in four diverse districts of Uganda, attracting around 2,000 attendees.

During the supplemental period, at least two additional community workshops promoting women's empowerment in rural Uganda will take place in year three, and one in year four. The workshops will be held in diverse areas across Uganda, engaging district veterinary officers and local women's groups, and encouraging rural household women to participate.

The workshops will include introduction to the Kuroiler program by the principal investigator and local collaborators; viewing a video that addresses the issues of proper Kuroiler management under rural conditions, improving family income through backyard poultry production, the role of eggs and chicken meat in family nutrition and the importance of the role women play in livestock production and African culture; and a Q&A in which local poultry experts will entertain questions and comments by farmers. Rural women will be encouraged to serve as owners of new mother units.

"I believe the work in the supplement should stimulate Ugandan entrepreneurs to consider Kuroiler production as a profitable business and, at the same time, make the birds available to needy small-holder farmers in all regions of the country," Sharma says. "Community involvement and women empowerment are key goals of the project. "

More information: To learn more about the chicken project in Uganda, visit biodesign.asu.edu/research/projects/kuroiler-chickens.

Provided by Arizona State University

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