



## Feed the Future Country Fact Sheet

Online Version: <https://feedthefuture.gov/article/feed-future-innovation-lab-hatches-plan-breed-heartier-chickens>

# Feed the Future Innovation Lab Hatches Plan to Breed Heartier Chickens



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Across rural Africa, women and children raise chickens for income and sustenance.

Among all birds, the humble chicken may rank as the most prized in rural parts of Africa. In these often climate-stressed parts of the world, chickens have high nutritional and economic value. They provide a source of high-protein food and a stream of reliable income, particularly for women.

Yet in Africa today, rural poultry production faces a significant threat from Newcastle disease, a highly contagious virus that can decimate entire flocks in a matter of days. One day, a flock can be healthy and producing eggs. Two to 15 days later, the chickens could all be sick or dead—and the household left without a means of subsistence.

The Feed the Future Innovation Lab for Genomics to Improve Poultry, led by the University of California, Davis, is working to meet these challenges by breeding chickens that are more resistant to Newcastle disease and heat stress. Researchers from a number of collaborating universities in Africa and the United States—including the University of Iowa, University of Delaware, University of Ghana, and Sokoine University of Agriculture in Tanzania—are applying advanced genetic and genomic approaches to identify genes or genetic markers associated with resistance to Newcastle disease and heat stress in local African chickens.

While routine vaccination has prevented Newcastle disease outbreak in poultry, in Africa, efforts to vaccinate chickens have often failed due to inadequate extension services, lack of cold chain systems to keep the vaccine viable, unreliable production and distribution and, occasionally, culture conflicts. Added to the persistent threat of Newcastle disease is the challenge of the hot African climate. Heat stress leads to decreased feed intake, low productivity and even more mortality in poultry.

This project uses an innovative application of genetic science to achieve an alternative and complementary solution to vaccination. Genetic improvement holds the great promise of a permanent answer to the problems of disease in small-scale poultry production in Africa. In addition, Feed the Future is preparing a new cadre of skilled professionals to help get heartier chickens into the hands of farmers and producers in need of additional sources of income and nutrition.