



Feed the Future Country Fact Sheet

Online Version: <https://feedthefuture.gov/article/american-university-and-family-owned-business-help-farmers-cut-costs>

An American University and Family-Owned Business Help Farmers Cut Costs



Dr. Kerry Clark

Gabriel Abdulai, a Soybean Innovation Lab research partner from Ghana and currently a Master's student in Bioengineering at the University of Missouri, stands next to the three small scale threshers built by local blacksmiths during an eight-day training.

In Sub-Saharan Africa, most smallholder soybean farmers pull dry mature plants up by hand and then hand-thresh them to separate the grain from the pods. The work is difficult and time consuming, the grain losses are high, and the resulting quality is poor. Smallholder farmers have a great need for low-cost and locally produced mechanization to reduce their labor and time burdens.

Researcher Kerry Clark of the Feed the Future [Innovation Lab for Soybean Value Chain Research](#), led by the University of Illinois, has seen evidence of this need first-hand. She realized it could be met if there were locally produced, small-scale threshers that smallholder farmers could afford. Such mechanization would also help plant breeders who operate national research stations and commercial seed producers minimize their own labor and time burdens.

To spur the development of a thresher that is small in scale, low in price, and can be produced locally, Clark worked with Gabriel Abdulai, an engineer with the Savanna Agriculture Research Institute (SARI) in northern Ghana, to launch a thresher design contest. It was open to engineering students at universities in the United States and countries in Africa.

Students had to build a thresher that cost less than \$1,000. The design had to be simple, easy to replicate for people with limited reading skills, and transportable either with a tow bar or with handles to be pushed like a wheel barrow. It also had to be able to thresh a small armload of whole soybean plants per load and easily capture the seed in 50-100 kilogram bags.

Engineers from an Iowa-based company, [ALMACO](#), served as the judges for the thresher contest, lending their years of experience in agricultural equipment design to small-scale thresher development. Since the 1970s, this family-owned business has been manufacturing custom agricultural equipment and is a leading U.S. manufacturer of agricultural research

equipment today.

After selecting the first-, second- and third-place winners, ALMACO continued to work with Abdulai to make changes to the winning design, helping make it more functional, efficient and economical.

Using this new design, Abdulai and Clark led an 8-day training to teach 12 blacksmiths and workers at the Tamale Implement Factory in northern Ghana how to construct the small-scale soybean threshers. Two Feed the Future projects, both funded by the U.S. Agency for International Development, sponsored the training. The blacksmiths learned how to create the threshers, received business training, and constructed three working threshing machines, which were distributed to three villages in northern Ghana.

Through its partnership with ALMACO, the Soybean Innovation Lab provides valuable skills and resources to blacksmiths and organizations wishing to construct low-cost, small-scale threshing machines for soybean production.

The Feed the Future Innovation Lab for Soybean Value Chain Research is USAID's comprehensive program dedicated to soybean research for development. For more information, visit soybeaninnovationlab.illinois.edu.