Africa RISING in Ghana
Creating Sustainable Systems for Agriculture

Country brief - March 2019

Outcomes

1. Technologies validated
2. Farmers worked with to validate technologies
3. Long-term trainings
4. Number of development partnerships

Research-in-development scope

1. Cropping systems
   - Agronomic management and crop varieties
2. Livestock systems
   - Feeding
   - Housing
   - Health
   - Breeds
   - Manure management
   - Integrated crop-livestock management
3. Natural resource management [NRM]
   - Nutrient cycling
   - Soil & water management
   - Fertilizers
4. Human condition
   - Nutrition
   - Food security/quality/safety
5. Mechanization
   - Postharvest handling
   - Field preparation
   - Irrigation

*Appropriate technologies are integrated within and across the components above.

Africa RISING’s theory of change

Demand-driven research identifies, adapts, validates and deploys sustainable intensification innovations

Better efficiency increases production

So rural households get more from the same amount of land – without compromising the needs of future generations to enhanced livelihood outcomes

Providing a range of options increases system sustainability

And improved income flow means better household nutrition and increased human capacity, leading to enhanced livelihood outcomes

Multiple sustainable intensification domains in an enabling policy environment result in long-term equity and viability
For more info. please contact:

Institute leads an associated project on monitoring, evaluation and impact assessment. Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research

The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government’s Feed the Future initiative. Through close collaboration and development partnerships, Africa RISING is creating opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base. The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands).

The Africa RISING West Africa Project focuses on research for development in across four priority thematic areas:

1. Cropping systems
   - Agronomic management and crop varieties
     - Maize-cowpea intercrops: The effect of different growth levels of cowpea living mulch and level of maize maturity in both farmers’ fields and community technology parks have demonstrated that planting early maturing maize (Omankwa) with cowpea as living mulch at 1 week after planting maize reduces weed infestation by 40% and increases maize yields by 36%.
   - Reduced labor demands will allow for easier adoption and more time for alternative livelihood options.
   - Optimal crop spacing: Optimal spacing of groundnut varieties (specifically Samnut 23) at a spacing of 30 cm × 15 cm has demonstrated that grain and haulm yields are increased by 22%. The increased yields will potentially provide income avenues for food, health, and education.
   - Maize leaf stripping: The stripping of leaves of the medium maturity maize variety (Obatanpa) at 30% silking has been shown to increase livestock feed by 27% with no penalty or decrease in maize yield experienced. The increased feed yields provide diversified diets of animal protein while improving food security.

2. Livestock systems
   - Feeding
     - Farmers have changed behavior through adapting feed rations to their own conditions; this contributes to sustainability.
     - Improved feeding in Northern Ghana has increased weight gains, increased production, and reduced mortality in the target communities, e.g., Tibali in the Northern Region.
     - In Ghana improved feed rations have increased reproduction rates, reduced mortality, and increased household (HH) income. Diversified income sources increase household resilience.
   - Housing
     - Improved housing in Northern Ghana has reduced stress and improved animal health and feeding.
   - Health
     - In collaboration with local health workers, regular vaccination has reduced mortality and helped provide reassurance for improved livestock management.
   - Breeds
     - Africa RISING and farming communities are currently exploring options for improved breeds of small ruminants for farmers through linking them to appropriate veterinary providers.

3. Natural resource management (NRM)
   - Nutrient cycling
     - The use of crop residues from leaf stripping, groundnut haulms, and cowpea living mulch helps to increase livestock productivity. The use of manure produced from livestock as organic amendments increases soil moisture storage capacity and soil fertility.

4. Human condition
   - Nutrition
     - Through promotion of vegetable growing and nutritional education, smallholder households in target communities have diversified diets (>3 food types) that diets provide food and nutritional security in target communities.
   - Food security/quality/safety
     - Increased vegetable growing offers higher household consumption of quality food and potentially higher income benefits that proceed from sales.

5. Mechanization
   - Postharvest handling
     - Fuel-powered maize shelling machines are very popular with 90% acceptability. The maize shelling machines have substantial labor-saving gains. Men noted it takes them 10 hours to shell one bag and women reported that it would take them about 1 week if they were doing it manually as a sole activity. The reduced labor demands will create service provision among farmers and allow for alternative livelihood options.
   - Field preparation
     - The use of appropriate tillage management practices, e.g., tied rides and contour planting and ridging increased soil moisture storage by 20% and increased maize yields by 15%.

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