Kenya
Integrated Pest Management Innovation Lab country profile

Population: 45 M
GDP per capita: $1,800
Feed the Future country? Yes
Involvement in this country since: 2005

Challenges:
- Weak value chain and poor IPM coordination
- Insect pests (whitefly, leaf miners, fruit borers)
- Over reliance on chemical pesticides
- Diseases (bacterial wilt, viruses, fungi)
- High postharvest losses
- Lack of clean planting material
- Water use inefficiency
- Weak disease diagnostic capacity

Related project name: Regional IPM Project in East Africa

Project overview: In Kenya, the project has advanced IPM by developing technologies that improve productivity and enhance the environmental and food safety of marketed horticultural crops (tomato, passion fruit, onion, and banana).

Accomplishments:
1. **Increased environmental and human health**: Dissemination of knowledge and information has led to environmental safety awareness and higher economic benefits as a result of reduced pesticide applications.
2. **Improved tomato production and value**: The IPM Innovation Lab team developed a high tunnel tomato production package that has contributed to sustainable intensification and food security. As a result, tomato value increased by US $8.8 million in the project area.
3. **Developed technology**: Grafting technology was introduced to combat bacterial wilt disease in tomato, high tunnels reduced pest infestation, and the beneficial fungus *Trichoderma* was introduced for controlling soil-borne fungal pathogens.
4. **Built short term capacity**: Scientists were trained on: virus indexing and pest diagnostics at Ohio State University and in Nairobi; new invasive species in Ethiopia and Senegal; and biopesticides in India and Nepal.
5. **Enhanced diagnostics support**: The effectiveness of IPM strategies was enhanced by training farmers and agricultural agents in disease identification diagnostics.
Farmers learn how to graft during an IPM IL workshop (left), and a farmer tends to his grafted tomato plants (right).

**Protecting passion fruit – with a passion**

In the past, it was not uncommon for Kenyan farmers to lose their entire passion fruit orchard within two years of establishment due to diseases. Soil-borne fungal diseases including Fusarium wilt, collar rot, and stem canker run rampant in the fields, and farmers are often driven to applying large amounts of highly toxic pesticides without much success.

The IPM Innovation Lab has been working in farmer-managed research sites to control the diseases using a variety of non-chemical strategies including biopesticides containing the beneficial fungus *Trichoderma* spp, disease-tolerant passion fruit varieties, and grass mulch to reduce insect pests and soil-borne inoculum. Foliar diseases including brown spot and woodiness have been managed through scouting and need-based biopesticides used in combination with field sanitation and pruning. Because of having learned these technologies, farmers—60% of 1,010 sampled—are now able to maintain a productive crop for four years. Two hundred extension officers received training on technologies for the integrated pest management of passion fruit. Brochures and training manuals on diseases affecting passion fruit and their management were distributed to 3,000 farmers and 200 extension officers. The adoption of new varieties promoted through the IPM Innovation Lab led to an increase in land area planted from 270 to 353 hectares between 2010 and 2012, while the value of the crop increased from $1.8 million to $6.6 million.

**Relevant website:**

**Local Implementers:**
Kenya Agricultural and Livestock Research Organization (KALRO)

**Regions/Provinces:**
Mwea, Kangai Tisa, Thika, Kirinyaga, Bungoma, Loitokitok

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