

Kenya

Integrated Pest Management Innovation Lab country profile



Map courtesy CIA World Factbook

Population: 46 M

GDP per capita: \$3,100

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 Projects:

1. Biological Control of Invasive Weed *Parthenium hysterophorus* in East Africa

Dissemination of knowledge and information has led to environmental safety awareness, reduced malnutrition (especially among women and children,) and higher economic benefits as a result of reduced pesticide applications.

2. Vegetable Crops IPM for East Africa

Focuses on implementing and disseminating IPM strategies to combat pests of vegetable crops in East Africa, such as tomato, onion, African eggplant, cabbage, chilies, and beans.

3. IPM for Rice, Maize, and Chickpea in East Africa

Focuses on implementing and disseminating IPM strategies to combat pests of staple crops rice, maize, and chickpea in East Africa.

Previous Accomplishments:

1. **Increased environmental and human health:** Dissemination of knowledge and information led to environmental safety awareness, reduced malnutrition (especially among women and children,) and higher economic benefits due to reduced pesticide applications.
2. **Improved tomato production and value:** IPM-IL team developed a high tunnel tomato production package that contributed to sustainable intensification and food security, increasing tomato value by US \$8.8.
3. **Developed technology:** Grafting technology was introduced to combat bacterial wilt disease in tomato, high tunnels reduced pest infestation, and 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 Nairobi, new invasive species in Ethiopia and Senegal, and biopesticides in India and Nepal.
5. **Enhanced diagnostics support:** Effectiveness of IPM strategies was enhanced by training farmers and agricultural agents in disease identification diagnostics.



USAID
FROM THE AMERICAN PEOPLE

VirginiaTech
Invent the Future®



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 *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. Farmers 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. Three thousand brochures and 200 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 acreage 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 Websites :

<http://www.oired.vt.edu/ipmil/our-work/projects/parthenium-in-east-africa>
<http://www.oired.vt.edu/ipmil/our-work/projects/vegetable-crops-for-east-africa>
<http://www.oired.vt.edu/ipmil/our-work/projects/rice-maize-and-chickpea-in-east-africa>

Local Implementers:

Kenya Agricultural and Livestock Research Organization (KALRO)

Principal Investigators:

Wondi Mersie, Virginia State University
John Cardina, Ohio State University
Tadele Tefera, International Centre of Insect Physiology and Ecology

Contact Info

Director, IPM Innovation Lab: Muni Muniappan,
Email: rmuni@vt.edu
Phone: (540) 231-3516

