

Indonesia

Integrated Pest Management Innovation Lab country profile



Map courtesy CIA World Factbook

Population: 253 M
GDP per capita: \$5,200
Feed the Future country? No
Involvement in this country since: 2004
Challenges:

- High population density
- Pesticide overuse
- Value chain issues
- Biodiversity loss
- Lack of extension service in remote areas

Related project name: Ecologically-Based Participatory IPM for Southeast Asia

Project overview: The IPM Innovation Lab's work in Indonesia focuses on participatory and collaborative IPM research and education programs with farmers who grow vegetables and other high-value crops, including coffee, cacao, and citrus. Collaborations with universities, NGOs, and government research institutes create a dynamic network of research and training programs that reaches thousands of Indonesian farmers. This network incorporates gender research that focuses on the importance of women's roles in the farm sector. The IPM Innovation Lab sponsors a variety of technical workshops and educational programs in which U.S. and international experts can work with Indonesian colleagues, scientists, and students.

Accomplishments:

1. **Long-term training:** Bogor Agricultural University, a leading institution in the country, has six Clemson University-trained Ph.D. faculty members, and leads a national IPM research effort focusing on high-value vegetable and fruit crops.
2. **Improved yield with new methods:** Under this project, working partnerships with research institutions in six major crop areas in the country have been established. These research efforts, coupled with outreach programs, have improved food security and safety and increased farmer incomes.
3. **Control of destructive pest:** Papaya mealybug devastation of Indonesian papaya crops was identified, analyzed, and controlled via IPM efforts initiated by program leaders and local collaborators.
4. **IPM research on the role of women farmers:** Women play critical roles in agriculture, including participation in production activities and household management. IPM strategies impact these roles, so gender research studies these effects and evaluates ways to improve the overall well-being of farm families and rural communities.
5. **Coffee and citrus in North Sumatera:** A remote district of North Sumatera Province exports coffee and citrus. With aid from the local district government, the IPM Innovation Lab has established a strong program for IPM training and extension support for coffee and citrus growers.



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Farm leaders and an NGO (FIELD) prevent attacks by the cocoa pod borer using biodegradable sleeves (left). At right, a farm leader prepares an automatic drip irrigation system for strawberry culture in pots.

Developing a suite of techniques to make the farmer's job easier

In Indonesia, the IPM Innovation Lab has been developing and communicating a suite of strategies that will improve farmer's livelihoods without compromising the environment. For instance, the use of the beneficial fungus *Trichoderma* is widespread in Indonesia and can be traced to IPM Innovation Lab collaborators from Bogor Agricultural University.

IPM researchers have also encouraged the use of a virus to control a major pest of shallots. The use of this beneficial virus dramatically reduced the need for applying harmful chemical pesticides to the crop. Microbial control is an additional strategy that has been successful in slowing the tide of coffee insect pests, and natural enemy populations have effectively controlled the devastating damage to papaya and potato caused by invasive species. Currently, a program is underway to introduce a biological control for the newest invader, the cassava mealybug, which is a serious threat to cassava production.

IPM tactics are widely applied to control pests of almost all the major vegetable crops in Indonesia. Support for IPM through research, training, and extension stems from the network of IPM Innovation Lab collaborators in Indonesia who work closely with the international community of IPM experts, who, in turn, are involved with IPM Innovation Lab work worldwide.

Relevant websites :

<http://www.oired.vt.edu/ipmcrsp/our-work/projects/southeast-asia/>

Local Implementers:

Bogor Agricultural University, Sam Ratulangi University, Udayana University, Indonesia Coffee and Cocoa Research Institute, Indonesia Vegetable Research Institute, FIELD/Indonesia

Regions/provinces:

North Sumatera, West Sumatera, North Sulawesi, West Java, East Java, Bali

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