

# Bangladesh

## Integrated Pest Management Innovation Lab country profile



Map courtesy CIA World Factbook

**Population:** 166 M  
**GDP per capita:** \$2,100  
**Feed the Future country?** Yes  
**Involvement in this country since:** 1993

### Challenges:

- Severe population density
- Pesticide overuse
- Value chain issues
- Bacterial wilt in the soil

**Related project name:** Regional IPM Research and Education for South Asia

**Project overview:** IPM Innovation Lab work in Bangladesh focuses on improving food security by supporting new techniques that aid smallholder farmers in growing pesticide-free vegetables while still combating pests and diseases. It uses participatory appraisals and baseline surveys, and promotes grafting and the use of pheromone traps.

### Accomplishments:

1. **Allowance of importation of pheromones:** The project was instrumental in getting the Bangladesh government to allow the importation of pheromones.
2. **Large-scale training of extension workers:** IPM work in Bangladesh has trained extension workers and employees of partnering NGOs in the practice of grafting, which has allowed eggplant farmers to grow this staple crop in spite of the scourge of bacterial wilt that had all but wiped out the crop.
3. **Improved yield with new methods:** Use of sanitation and biocontrol agents as opposed to traditional pesticides in the treatment of pod borers and aphids—major pests of bean in Bangladesh. Yield was much higher with this method.
4. **Beneficial fungus production improves women's lives:** A gender analysis of production of *Trichoderma* has shown that women producers of this beneficial fungus experienced an increase in income and improved family relations.



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An extension worker learns how to graft eggplants (left), and a farmer (right) shows off a pheromone trap.

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

Activities in Bangladesh include demonstration trials of mature IPM packages in farmer fields as well as on-station research on potential IPM packages for major vegetable crops. IPM packages have been developed and validated for country bean, bitter gourd, tomato, eggplant, pointed gourd, okra, cabbage, and cauliflower. Some of the technologies developed include: area-wide management of the cucurbit fruit fly using cue lure traps; grafting eggplant and tomato seedlings on resistant rootstock for the control of bacterial wilt; application of *Trichoderma* for the control of soil-borne fungal pathogens; the use of pheromone traps for monitoring lepidopteran pests; inundative release of the egg parasitoid *Trichogramma* spp., the larval parasitoid *Bracon hebetor*, and lacewing (*Chrysoperla* sp.) for the control of various pests; and introduction of resistant varieties.

Our main thrust has been to develop and test full-season IPM packages—suites of techniques optimized for a given crop—that address all pest issues including arthropods, diseases, nematodes, and weeds to provide economical, environmentally-benign, and safe approaches to managing pests. These packages are supported by problem-specification activities such as grower and pest surveys, component and discipline-based research, and evaluation activities that measure economic and social impacts. While each country develops a work plan based on local needs, every effort is made to coordinate activities among countries in the region.

#### **Relevant websites**

<http://www.oired.vt.edu/ipmcrsp/our-work/projects/south-asia/>  
<http://ento.psu.edu/directory/uvu>

#### **Local Implementers**

Bangladesh Agricultural Research Institute (BARI)  
Mennonite Central Committee (MCC)  
Grameen Krishok Sohayak Sangstha (GKSS)  
Ispahani

#### **Regions/provinces**

Barisal, Bogra, Dhaka, Gazipur, Jessure, Khulna, Narsingdi

#### **Principal Investigator:**

Edwin Rajotte, Pennsylvania State University

#### **Contact Info**

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