Country Paper

Plant Protection Activities
in Bangladesh



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Area
147570 Square Km

Boundaries
North-India (West Bengal & Meghalaya), West-India (West Bengal), East-India (Tripura & Assam, Myanmar), South-Bay of Bengal

Climactic Variations
The climate of Bangladesh is tropical monsoon marked by sweltering temperature and high humidity. Bangladesh has mainly four seasons: Summer (Mar-May), Monsoon (Jun-Sep), Autumn (Oct-Nov) and Winter (Dec-Feb)

Rainfall
1194 mm to 3445 mm (average during monsoon June-August)

Humidity
Highest 99% (July), Lowest 36% (December & January)

Population
140 million, Density per Sq. Km. 926, Adult literacy rat above15 yrs: 51.6%, Population growth rate 1.54, life expectancy : 65.1 years (average)

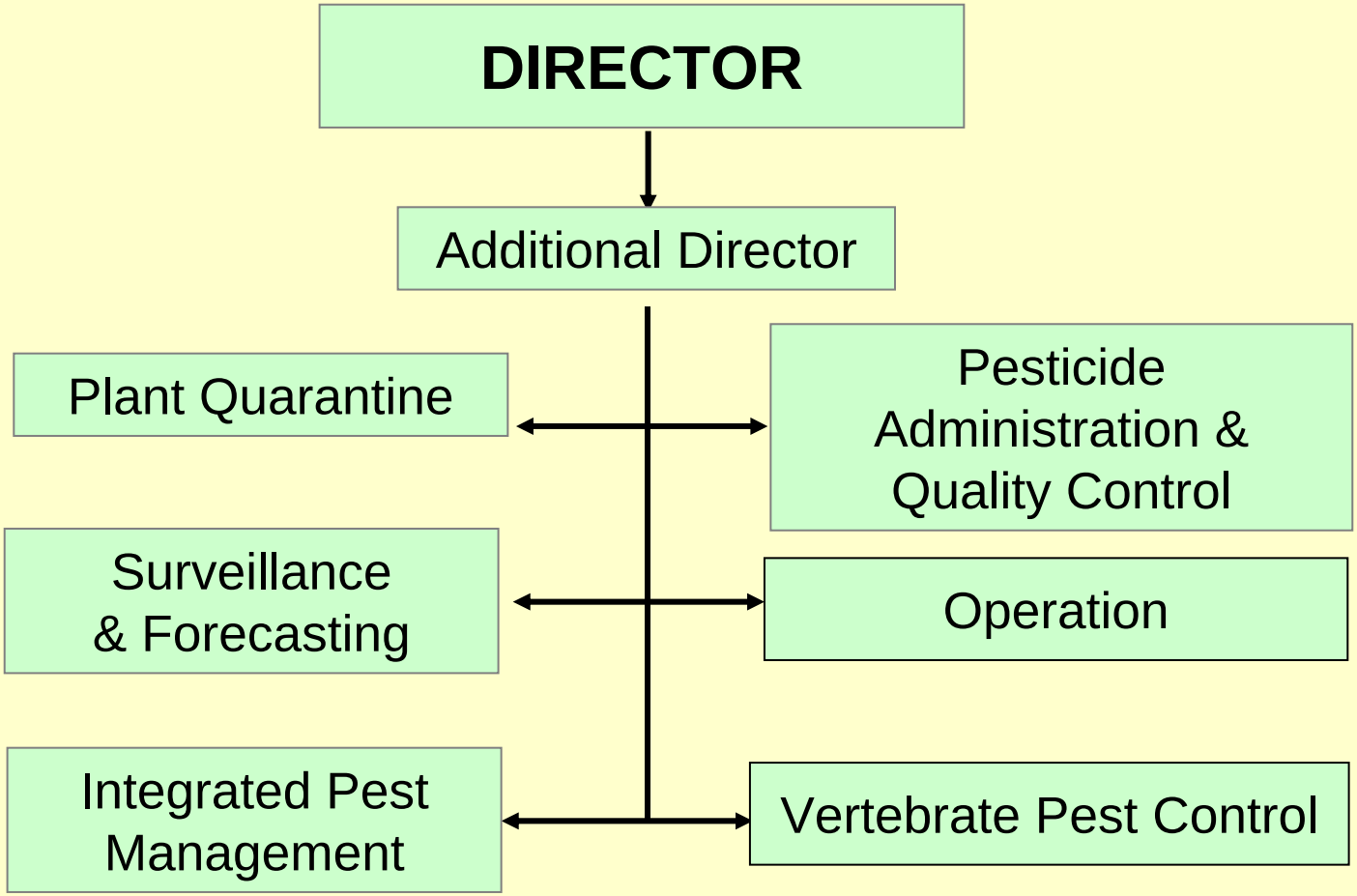
Principal Crops
Rice, Jute, Tea, Tobacco, Wheat, Sugarcane, Vegetables, Potato, Pulses etc.

Plant Protection activities (2007-2008)

- Bangladesh is a tropical country
- The warm humid climate of Bangladesh is favorable for various pest & diseases on crops.
- About 15% of the crops are damaged by the pest & diseases annually.

- **Plant protection activities started in 1947 through Entomology Division**
- **In 1956 Plant Protection activities started in organized form .**
- **Till May 1979, it was under Director of Agriculture (E & M) .**
- **In June 1979 it appeared as a separate directorate "Directorate of Plant Protection" but in 1982 it became a Wing of DAE .**

ORGANISATIONAL STRUCTURE OF PLANT PROTECTION WING, DAE



Responsibilities of the PP Wing

- **Survey Plant disease and insect pest infestation and recommend management practices.**
- **Forecasting outbreaks of plant disease & pest infestation & recommend preventive or preparatory action where necessary .**
- **Intercept the exotic pest & diseases .**
- **Maintenance & control over pesticide production, sale & use.**

Responsibilities of the PP Wing

- **Assessing the impact of pesticide use & protection of the environment .**
- **Acting as main link between DAE & research to obtain information about new pest management technologies.**
- **Development of national action plan to deal with major outbreaks of pest & diseases.**
- **Maintenance of buffer stock to help small & marginal farmer in case of emergency or disaster.**

PLANT QUARANTINE SECTION

- **Enforcement of "Destructive Insects and Pests Rules, 1966 (Plant Quarantine) amended in 1989".**
- **Incorporate new Rules and Policies on Plant Quarantine.**
- **Plant Quarantine Activities at the Check Posts of the Entry Points and issuance of release order of Plant Commodities.**
- **Issuance of Phytosanitary Certificate for export of agricultural products.**
- **Recording Interception of Pests and Diseases.**

Plant Quarantine Stations in the Country

There are 19 Plant Quarantine Stations:

a. Airports - 3 nos. (Zia, Chittagong, Sylhet)

b. Seaports - 2 nos. (Chittagong, Mongla)

c. Land border check post - 12 nos. (Benapole, Darshana,Tamabil, Burimari, Teknaf , Akhaura, Hilli, Sona Masjid, Bhomra, Bangla Bandha, Jakigang, Bibir Bazar,)

d. River port - 1 no. (Narayanganj)

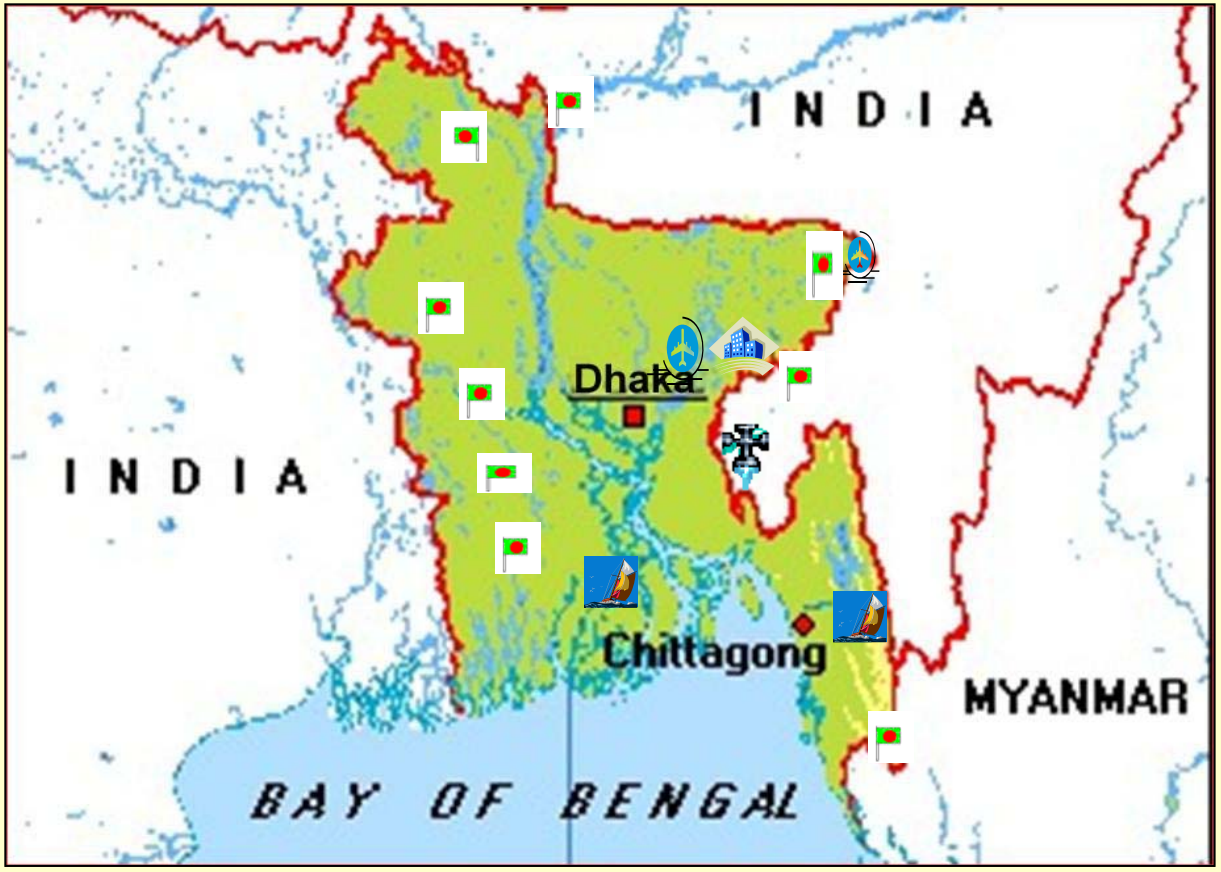
e. Railway Port (ICD Kamlapur)

Location of Plant Quarantine Station

Legend

- Air Port
- Sea Port
- River port
- Head Office
- Land Border Check Post

Plant Quarantine Station



PESTICIDE ADMINISTRATION AND QUALITY CONTROL SECTION

- Estimation of Annual requirements of Pesticides
- Ensure supply of Pesticide throughout the country
- Implement the decisions of Pesticide Technical Advisory Committee
- Registration & Renewal of Pesticide for marketing
- Issuance of License
- Standardization
- Quality Control of Pesticide



SURVEILLANCE AND FORECASTING SECTION

- **Collect, Analyze and interpret data on Pest and Diseases incidence.**
- **Calculate the Severity of Pest and Diseases incidence.**
- **Determination of level of infestation.**
- **Forecasting and providing Early warning about Pest and Diseases incidence.**



OPERATION SECTION

- **Carry out Pest Control operation.**
- **Monitoring Pest Management.**
- **Emergency disaster Pest Management**



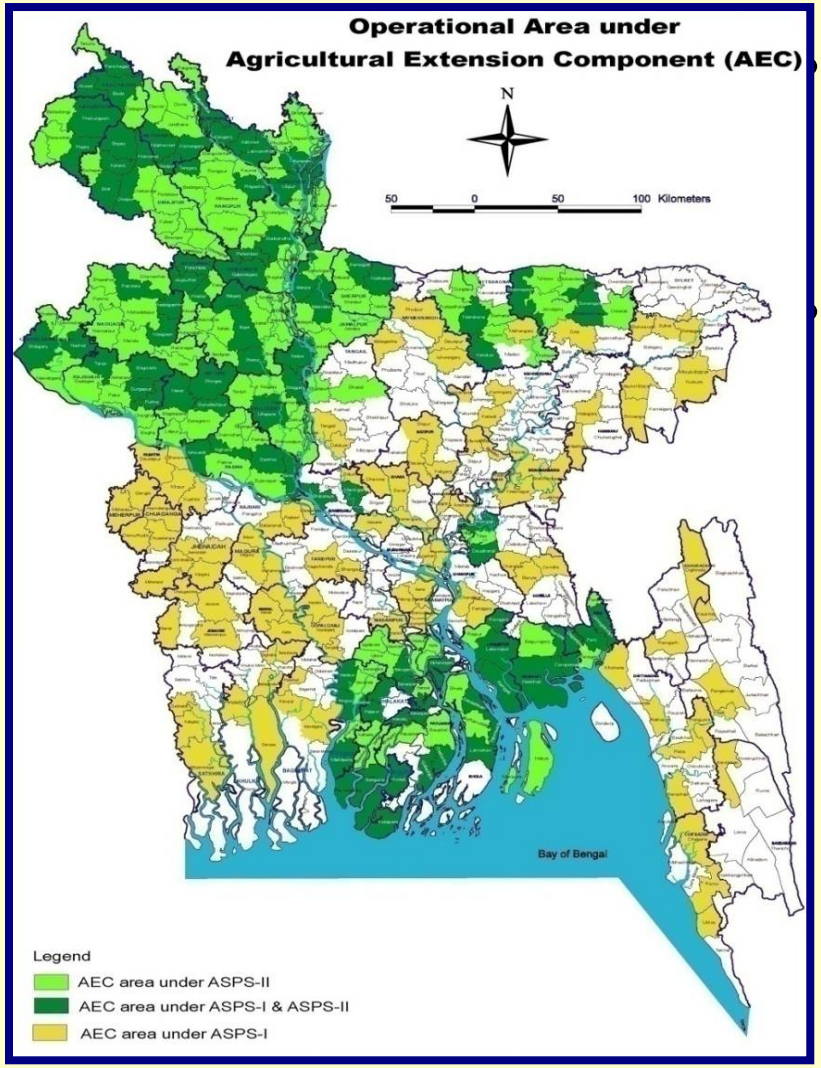
Integrated Pest Management
IPM major crops in Bangladesh

- Rice
- Vegetables
  - Eggplant
  - Cauliflower
  - Cabbage
  - Cucurbits
  - Country bean
  - Potato
- Cotton



Rice is the main crop in Bangladesh

Farmer Field Schools in Bangladesh

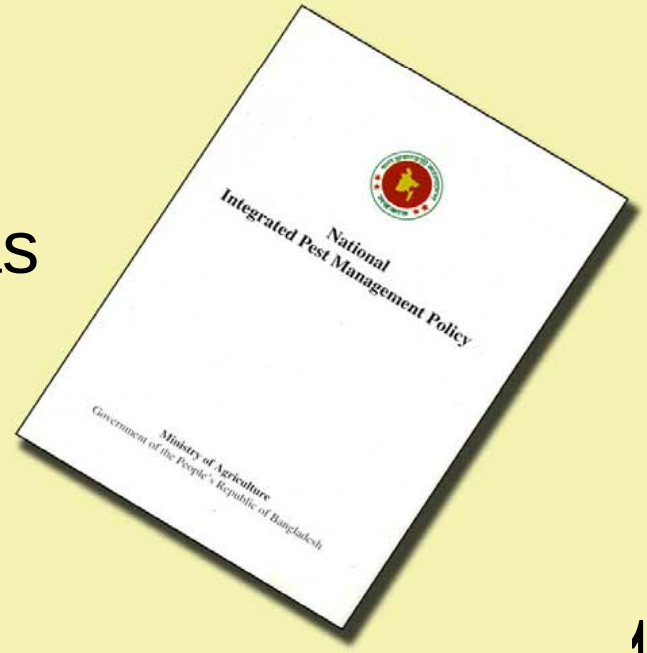


- Working area of the ongoing Agricultural Extension Component
- Coverage: 335 upazilas (sub-districts)

National IPM policy

Key Components:

- Maintaining ecological balance
- Executing appropriate actions on pesticides
- Operating an effective system for implementing the national IPM programme
- Developing human resources as the core of IPM
- Conducting research on IPM



IPM ⟶ ICM

	IPM	ICM
Duration	Season Long	Season Long
Session #	14	20
Participating Farmers	25	50 (Male 25 Female 25) from 25 farm families
Address to	Individual Farmer	Farming Family
Emphasis	Pest Management	• Holistic approach to crop production • Year round homestead veg. garden • Food and Nutrition • Community Development

Progress of IPM/ICM Activities in Bangladesh

- Since 1996, a total of 2232 field level officers of the Department of Agriculture have been trained as IPM/ICM facilitators through season long training
- 2000 Farmer Trainers have been developed and they are running FFS in their localities.
- Over 800000 farmers (male and female) has been trained in IPM/ICM approach
- National IPM Policy has been approved by the Government in 2002
- For sustainability of IPM/ICM in the community, over 10,000 IPM/ICM clubs have been established
- Ten upazila (sub district) Farmers Association (UNFA) have been formed.

Varieties Resistant to Pest and Diseases of Rice and Vegetables

Rice

BPH : BRRI Dhan 26, 31 & 35

Blast : BRRI Dhan 28, 33, 43, 44 & 45

Tungro : BRRI Dhan 36, 37, 39 & 41

Vegetables

Jassid : BARI Begun (Egg plant)-6

Bacterial Wilt : BARI Begun – 8

A View of FFS



Session: Home stead vegetable production



Exercise on homestead vegetable growing





Vegetable production in home stead

Session: Education on Human Nutrition





Nutrition based food identification





Exercise on cooking





Importance of FYM and different source of FYM





Farm yard Manure Preservation

Community Approach for Sustainability







কৃষক



কৃষক মাঠ স্কুল



কৃষক ক্লাব

কৃষক এসোসিয়েশন গঠনের ধারণাগত কাঠামো



ইউনিয়ন কৃষক এসোসিয়েশন



উপজেলা কৃষক এসোসিয়েশন (প্রস্তাবিত)



জেলা কৃষক এসোসিয়েশন (প্রস্তাবিত)



Community Approach for Sustainability



Recent Outbreak of Pest and Diseases

- BPH in T.Aman 08 and Boro 09
- Blast and Bacterial Leaf Bright in rice
- Cutworm (*Spodoptera litura*) in several crops (vegetables, beans and pulses).
- White fly in Guava
- Mealy bug in papaya
- White mould (*Sclerotinia sclerotiorum*) in oil seed crops and vegetables.
- Gummosis in Jackfruit.

Outbreak of *Sclerotinia sclerotiorum*









Hopper burn by BPH





Outbreak of common cutworm, *Spodoptera litura*









Spodoptera litura: a cosmopolitan pest



Bitter Gourd



Cabbage



Summer Tomato



Okra



Lathyrus



Mung bean

Outbreak of papaya mealy bug





Attacking papaya, okra, brinjal, cotton etc.





Status of GMO Crops in Bangladesh

- Government is very supportive to GMO crops
- A guideline for GMO Crops has been approved by the Government
- Agril. Biotechnology Support Project Phase II (ABSP-II) with financial support of USAID and technical guidance of Carnell University, USA is operating this project in Bangladesh.
- The project is predominantly working for two technologies (i) Resistance to eggplant shoot and fruit borer – it is Bt technology & (ii) Potato resistance to late blight disease – Rb gene technology.
- One season confined field trials have completed by Bangladesh Agricultural Research Institute

Status of GAP in Bangladesh

- Government and Private sector are giving importance of GAP for exportable vegetables.
- Pesticide free vegetables and fruits are grown in some places but in a very limited scale.
- Linkage to market access of pesticide free vegetables and fruits should be given emphasis.
- Producers need to be encouraged.
- Public awareness need to be created on the benefits of pesticide free vegetable and fruits.

International Cooperation

- Capacity building of Plant Protection Officials of DAE and Research Institutions.
- Strengthening the Pesticide Laboratory of Department of Agricultural Extension.
- Strengthening the post entry Quarantine Laboratories.

Thank You



