IDENTIFICATION OF CAPACITY BUILDING NEEDS IN ASEANET FOR THE MANAGEMENT OF INVASIVE ALIEN SPECIES

By
Soetikno S. Sastroutomo\textsuperscript{1}, Lum Keng Yeang\textsuperscript{1}
and Loke Wai Hong\textsuperscript{2}

\textsuperscript{1)ASEANET and 2)CAB International, SE Asia Regional Centre}
P. O. Box 210, 43400 UPM Serdang, Selangor, Malaysia
ESTABLISHMENT OF ASEANET

- February 1994: Feasibility study in Thailand, Indonesia, Malaysia, Singapore and Philippines
- April 1994: Report presented to the 5th Meeting of ASOEN in Brunei Darussalam
- August 1996: ASEANET Formulation Workshop held in Kuala Lumpur, Malaysia
- September 1998: Officially endorsed by ASOEN in Singapore
- ASEANET operational in May 1999
Capacity-building in taxonomy and related sciences to enable ASEAN nations to manage its mega-biodiversity for sustainable development to fulfill national obligations under the CBD, and

To prepare member economies for compliance to SPS rules under the WTO Agreement.
WORK PROGRAMMES

1. Development of information and communication services
2. Human resource development
3. Rehabilitation of collections and records
4. Development/adoption of new technologies
INITIAL FUNDING FOR TWO YEARS (1999-2001)

SUPPORTED BY BioNET INTERNATIONAL

- £ 25,000 per year for NECI activities
- £ 15,000 per year for BioNET Fellowship
- £ 5,000 per year for Information Support Services for the Network
ASEANET MEMBER COUNTRIES
MAJOR OPTIONS FOR DEALING WITH IAS

- PREVENTION
- EARLY DETECTION
- ERADICATION
- CONTROL
PREVENTION OF INTRODUCTION IS THE FIRST AND MOST COST-EFFECTIVE OPTION

1) Interception based on regulations
2) Treatment of contaminated materials
3) Prohibition of particular commodities in accordance with international regulations
4) Implement import risk assessment for introduction of non-indigenous species
ASEANET- AFFA
NEEDS ASSESSMENT SURVEYS

OBJECTIVES

1. To compile information related to the status of institutional capacities and practices in taxonomy and identification of pests, including collection management, data handling, information management, infrastructure and human resources
OBJECTIVES

2. To assess the existing level of diagnostic and taxonomic expertise available to support pest collections and the areas of critical need

2. To determine the needs of ASEAN countries to achieve realistic self-reliance as envisage for an operational regional network in taxonomy
<table>
<thead>
<tr>
<th>National/Regional Institutions Visited</th>
<th>Arth.</th>
<th>Pl.Path.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei Darussalam</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Laos</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Malaysia</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Myanmar</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Philippines</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Singapore</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Thailand</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>
ASEANET- CABI

PLANT HEALTH SURVEY

OBJECTIVES

To compile information related to NPPO in each country of the ASEAN:

• Human Resources
• Facilities (buildings and equipment)
• Documented Procedures
• Priorities for Technical Assistance
CATEGORIES OF QUESTIONNAIRE

- Background Information
- Phytosanitary Legislation
- Diagnostic Capabilities for Imported Commodities and Surveillance
- Pest Risk Analysis
- Surveillance
- Exotic Pest Response
- Inspection System
- Export Certification
- Technical Assistance Priorities
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>AIRPORTS</th>
<th>SEAPORTS</th>
<th>LANDBORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Points</td>
<td>Person</td>
<td>Points</td>
</tr>
<tr>
<td>Brunei</td>
<td>1</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>42</td>
<td>180</td>
<td>85</td>
</tr>
<tr>
<td>Laos</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>12</td>
<td>91</td>
<td>22</td>
</tr>
<tr>
<td>Myanmar</td>
<td>2</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Singapore</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Philippines</td>
<td>-</td>
<td>&gt;100</td>
<td>-</td>
</tr>
<tr>
<td>Thailand</td>
<td>7</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Vietnam</td>
<td>3</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Responsibility of NPPO:</td>
<td>No. of Countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. PC issuance</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Ensuring the PC in conformity with IPPC</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Pest surveillance</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Inspection of plant and plant products</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Disinfection to meet phyto-sanitary requirem.</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Conducting PRA</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. R&amp;D in Plant Protection</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Submitting info on NPPO to IPPC</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Determining import protocols</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Approving/registering PEQ</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. Power to search and seize</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. Declaration form for importer</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Diagnostic Capabilities in the ASEAN Countries

### Human Resources

**Total in 9 countries**

1. **Fruitfly specialists**
   - At NPPO: 25-30
   - Outside NPPO: 24

2. **Diptera specialists**
   - At NPPO: 6
   - Outside NPPO: 19

3. **Lepidoptera specialists**
   - At NPPO: 5
   - Outside NPPO: 30

4. **Coleoptera specialists**
   - At NPPO: 8
   - Outside NPPO: 25
5. Hemiptera specialists
   At NPPO 3
   Outside NPPO 19

6. Stored product specialists
   At NPPO 70
   Outside NPPO 36

7. Thysanoptera specialists
   At NPPO 2
   Outside NPPO 17

8. Arachnida specialists
   At NPPO 2
   Outside NPPO 17

9. Mollusc specialists
   At NPPO 3
   Outside NPPO 23
10. General entomologists
   At NPPO 143
   Outside NPPO >106

11. Fungal pathology specialists
   At NPPO 29
   Outside NPPO >55

12. Bacteriology specialists
   At NPPO 12
   Outside NPPO 43

13. Plant virology specialists
   At NPPO 11
   Outside NPPO 33

14. General pathology specialists
   At NPPO 120
   Outside NPPO >80
15. Nematologists
   At NPPO 14
   Outside NPPO >23

16. Weed scientists
   At NPPO 23
   Outside NPPO >25
DIAGNOSTIC CAPABILITIES IN THE ASEAN COUNTRIES

AVAILABILITY OF DOCUMENTED PROCEDURES
1. For identification of arthropod pests 6
2. For identification of fungi and bacteria 6
3. For identification of nematodes 6
4. For identification of viruses and virus-like organisms 6
5. For identification of weeds 6
6. For conducting research on rapid diagnostic techniques (RPT) and detection 4
7. Institutions outside NPPO conducting research on RPT and detection 7
PEST RISK ANALYSIS
IN THE ASEAN COUNTRIES

Availability of National PRA standard 7
Is this consistent with International PRA? 5
Availability of formal PRA Group 3
Human Resources for PRA
1. Entomologists 7
2. Mycologists/bacteriologists 7
3. Virologists 4
4. Nematologists 5
5. Weed scientists 5
Staff trained on international standard PRA5 (11)
Software tools on PRA 6
PEST SURVEILLANCE CAPABILITIES IN THE ASEAN COUNTRIES

1. Availability of National Databases of Plant Pests Records 7
2. Official surveys of crops for pests 7
3. Staff trained in surveillance 6
4. Availability of full time regional managers for surveillance 5
5. Availability of computer/IT staff for surveillance 7
6. Basic equipment for surveillance 9
EXOTIC PEST RESPONSE CAPABILITIES IN THE ASEAN COUNTRIES

1. Availability of national standard/guidelines for responding to exotic pests introduction 6
2. Conformity with International Standard 5
3. Availability of management team for coordination of activities 4
4. Availability of qualified staff to assess the feasibility of eradication programme 7
5. Availability national manager/coordinator for exotic pests response 7
INSPECTION SYSTEM AT POINTS OF ENTRY AND EXIT

DOCUMENTED PROCEDURES FOR INSPECTING REGULATED ARTICLES

1. Passengers and their baggage  5
2. Air cargo  5
3. Sea-mail  5
4. Mail  5
5. Land cargo (trucks and cars)  5
INSPECTION SYSTEM AT POINTS OF ENTRY AND EXIT

DOCUMENTED SYSTEMS FOR RECORDING

1. Place of inspection 9
2. Date of inspection 9
3. Name of inspector 9
4. Commodity type inspected 9
5. Origin and carrier 9
6. Pest detected 9
7. Treatment carried out 9
8. Release/disposal 9
INSPECTION SYSTEM AT POINTS OF ENTRY AND EXIT

ADVANCED EQUIPMENT FOR INSPECTION AT ENTRY POINTS

1. X-ray machine 1
2. Fluoroscope 2
3. Incubators 4
4. Computerized data recording and retrieval 4
5. System for informing trading partners of any non-compliance immediately after detection 5
# Technical Assistant Priorities in the ASEAN Countries

## Phytosanitary Legislation

<table>
<thead>
<tr>
<th>Human resources</th>
<th>Buildings</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>43 2)</td>
<td>28</td>
<td>33</td>
</tr>
</tbody>
</table>

## Diagnostic Capabilities

<table>
<thead>
<tr>
<th>Human resources</th>
<th>Buildings</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 1)</td>
<td>31</td>
<td>36</td>
</tr>
</tbody>
</table>

## Pest Risk Analysis

<table>
<thead>
<tr>
<th>Human resources</th>
<th>Buildings</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 4)</td>
<td>27</td>
<td>34</td>
</tr>
</tbody>
</table>

## Surveillance

<table>
<thead>
<tr>
<th>Human resources</th>
<th>Buildings</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TECHNICAL ASSISTANT PRIORITIES IN THE ASEAN COUNTRIES

EXOTIC PEST RESPONSE
a) Human resources
b) Buildings
c) Equipment

INSPECTION SYSTEM
a) Human resources
b) Buildings
c) Equipment
RECOMMENDATIONS

1. There is a need to strengthen and define institutional responsibilities for developing and maintaining disease herbaria and pest collections including IAS;

2. There is a need to increase the number of trained plant health professionals in relevant agencies/institutions, especially in the following areas:
   a) identification, diagnostic and early detection of pests including invasive species,
   b) surveillance, monitoring and risk analysis,
   c) database management related to specimens
RECOMMENDATIONS

3. There is a need for a regional network of plant health professionals to assist them to identify pest of quarantine importance and IAS;

4. There is a need to improve infrastructure and support to ensure the maintenance of existing disease herbaria and pest collections (including IAS) as well as to rehabilitate them to acceptable international standards to support risk analyses;

5. There is a need to generate comprehensive data on local pests or improve ‘passport’ data on existing specimens to meet the International Plant Protection Convention (IPPC) standard (ISPM No.8) for a pest record;
RECOMMENDATIONS

6. There is a need to improve and sustain information systems for data on specimens held in the herbaria and collections;

7. There is a need to improve understanding among some senior managers of the importance of IAS in biodiversity conservation issues.
ONGOING ASEANET INITIATIVES ON IAS

1. With DOA, co-organising a national workshop on IAS in Malaysia (8-9 October 2003).
2. With CABI-SEARC, conducting survey on “The Management of IAS in SE Asia”.
3. Establishment of “ASEAN Invasive Species Information Network” (proposal)
4. As Technical Secretariat of ASEAN Plant Health Cooperation Network
ASEAN Plant Health Co-operation Network

- endorsed by ASEAN Ministers on Agriculture & Forestry (AMAF) in August 2003
- to harmonize and co-ordinate regional capacity-building in quarantine & plant health
- technical support by ASEANET
- act as gateway to regional development assistance related to quarantine & plant health
- serve as regional information hub on relevant areas
Thank you