Regional Seminar-Workshop on Harmonizing Methods in Risk Assessment and Management of Forest Invasive Alien Plant Species in Southeast Asia

COMPLETION REPORT

Introduction

Since 2004, the SEAMEO Regional Centre on Tropical Biology (BIOTROP) has been conducting national and regional training courses on control and management of invasive alien plant species. It has trained close to 400 researchers, lecturers, quarantine officers, and project managers from government and private institutions from Cambodia, Indonesia, Malaysia, Philippines, Thailand, Timor Leste, and Vietnam. Considering the economic and environmental impacts of invasive alien plant species in Southeast Asia and the ASEAN goal of economic integration in 2015, the Centre thought of implementing a seminar-workshop on harmonizing methods in risk assessment and management of invasive alien plant species in 2014, instead of its regular national and regional training courses. SEAMEO BIOTROP thus developed the concept note for the seminar workshop sometime in February 2014.

In early July 2014, SEAMEO BIOTROP shared the idea of the seminar-workshop with the UN Food and Agriculture Organization Regional Asia Pacific (FAO-RAP) Office and also explored the possibility of organizing it collaboratively in late October 2014. In early August 2014, SEAMEO BIOTROP and FAO-RAP agreed to have a Skype meeting to discuss further the concept note and the possible collaborative arrangements. After two weeks, SEAMEO BIOTROP got FAO-RAP's approval to collaborate in implementing the seminar workshop in December 2014. Later on, the final dates for the seminar workshop was agreed to be on 2-5 December 2014.

From September to November 2014, a series of email exchanges took place between SEAMEO BIOTROP and FAO-RAP towards finalizing the seminar workshop program, resource persons, participants, and collaborative agreements. On 5 November 2014, the Letter of Agreement was finalized and approved by both SEAMEO BIOTROP and FAO-RAP.

Seminar-Workshop Rationale, Objectives, and Expected Outputs

The rapidly accelerating trade and travel through various forms of modern transportation have allowed both intentional and unintentional movements of plant and animal species between different parts of the globe, often resulting to unexpected and sometimes disastrous consequences. Invasive alien species (IAS) are now considered as one of the leading threats to natural ecosystems and biodiversity considering their numerous effects that are usually irreversible. They also impose great impacts on agriculture, forestry, and fisheries, as well as human health.

A recent study estimated that Southeast Asia incurs a conservative total annual loss of US$33.5 billion caused by IAS to agriculture, forestry, human health and the environment (Nghiem LTP, Soliman T, Yeo DCJ, Tan HTW, Evans TA, et al., 2013). Of this amount, about ninety percent was attributed as losses and costs to the agricultural and forest sectors while the rest were associated with human health and the environment. By 2015, the region is expected to achieve the ASEAN Market Community which allows for an open market system and thus more frequent export and transportation of biological products. Such system is expected to increase problems associated with IAS unless effective methods for risk analysis, which scrutinizes the potential characteristics of a species to be invasive and identifies the feasibilities for managing them, are in place.

Management of IAS is the ninth Aichi Biodiversity Target of the Convention on Biological Diversity (CBD). By 2020, the CBD hopes that IAS and their pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment. Risk analysis plays a significant role in realizing this Target as well as in reducing the potential damages of IAS to global economy, health, and the environment.

To ensure international action towards protection of plants including forest tree species from IAS under the International Plant Protection Convention (IPPC), three international standards on pest risk analysis (PRA) have been developed and adopted by 176 member countries. These standards describe the integrated processes to be used for risk assessment as well as the selection of risk management options. Adoption of these standards in ASEAN countries has been slow and inconsistent due to poor co-operation between agencies and countries. It is therefore important to ensure that reliable methods and approaches in pre-and post-border risk analysis of IAS align with international standards exist in a harmonious way among countries in the region.

Thus, the seminar-workshop was generally aimed to bring about consensus among participants in adopting a more harmonized approach to risk analysis of forest invasive alien plant species (FIAPS) in Southeast Asia. The seminar-workshop's specific objectives were to:

1. Update the list of FIAPS that are found in the region
2. Identify and level off the gaps in regional capacities for risk analysis and management of FIAPS
3. Compile good practices in risk analysis and management of FIAPS which aligns with International standards
4. Come up with a priority list of areas of concern on risk analysis of FIAPS needing further research and capacity building that could be undertaken collaboratively between and among countries in the region
5. Develop a mechanism for effective networking and regular sharing of information and expertise on risk analysis and management of IAPS in the region

From the abovementioned objectives, the seminar-workshop was expected to produce the following outputs:

1. Updated list of FIAPS by country
2. Compilation of good practices and gaps in risk analysis of FIAPS
3. Recommendations for a more harmonized approaches to risk analysis of FIAPS
4. List of research and capacity building needs on risk analysis of FIAPS
5. Draft mechanism for networking and information exchange on risk analysis of FIAPS
6. Seminar-workshop Proceedings

Seminar-Workshop Program,
Duration and Venue

The seminar-workshop was held on 2-25 December 2014 at SEAMEO BIOTROP headquarter in Bogor, Indonesia. The program of activities consisted of plenary lecture-discussions with invited resource persons, country report presentations by participants, and small group and plenary workshops.

A day before the start of the seminar-workshop, a meeting was held among the resource persons to ensure a smooth flow of the activities and avoid overlaps on the scope of topics that they will present. This meeting resulted to minor changes in the schedule of activities: (1) transferring the first part of the country reporting to afternoon of Day 1 and thus transferring too all the Day 1 afternoon sessions to Day 2 afternoon sessions; (2) additional session on IAS science-based approaches in the international policy context by Dr. Andy Sheppard, and (3) A Review of the Global Protocols and Agreements Related to IASby Dr. Junko Shimura on Day 3 morning. **Attachment A** contains the details of the revised program of the seminar-workshop.

Participants and Resource Persons

Twenty-eight researchers, mid-level officers, university lecturers, and post-graduate student from Bhutan (1), Indonesia (19), Lao PDR (1), Malaysia (1), Myanmar (1), Philippines (2), Thailand (1), and Vietnam (2) attended the seminar-workshop. Timor Leste and Cambodia were invited to participate in the seminar-workshop but the former did not nominate a representative while the latter's nominee eventually backed out due to important office concerns. **Attachment B** contains the names and organizational affiliations of the participants.

Resource persons were drawn from international, regional, national institutions engaged in biodiversity conservation and risk analysis of invasive alien species. **Attachment C** lists the names and organizational affiliations of the resource persons.

Collaborative Arrangements

The seminar-workshop was held with support from the following institutions:

1. The Convention on Biological Diversity Secretariat, Commonwealth Scientific and

Industrial Research Organization *(*CSIRO*)* of Australia, and National Institute for Agro-Environmental Sciences of Japan which provided experts and air ticket subsidy.

2. CABI which subsidized the air tickets of participants from Cambodia, Indonesia, Philippines and Vietnam who are involved in the GEF Project on Project on Removing Barriers to Invasive Species Management in Production and Protection Forests in South East Asia

3. FORIS Indonesia, a network of researchers and decision makers from the Forestry Research and Development Agency (FORDA) of the Ministry of Forestry of Indonesia involved in the GEF Project on Removing Barriers to Invasive Species Management in Production and Protection Forests in Southeast Asia-Indonesian Program to subsidize the participation of 19 Indonesians, share in the publication cost of the seminar workshop proceedings and host the welcome dinner.

Seminar-Workshop Highlights

Day 1: December 2

Opening Program

SEAMEO BIOTROP Director Prof. Dr. Bambang Purwantara officially opened the seminar-workshop. Messages from partner-institutions were also delivered by Dr. Shiroma Sathyapala on behalf of FAO and Dr. Junko Shimora on behalf of the CBD Secretariat (Mr. Braulio Ferreira de Souza Diaz).

First Session:
Current Global Protocols and Initiatives in Biodiversity Conservation with Special Focus on IAS Control and Management by Dr. Junko Shimura

Dr. Junko shared the following information in her presentation:

- Definition of terms: alien species, invasive species, invasive alien species
- Evolution of the global interest on IAS from pests in 1920s to trade agreement (i.e. sanitary and phytosanitary measures) in the 1990s
- CBD's guidelines on IAS specifically Article 8h which is legally binding among member parties of CBD thus needs to be translated at the national policy for implementation
- Article 6 of the CBD Guidelines on National Biodiversity Strategies and Action Plans and Article 14-1a on Impact Assessment and Minimizing Adverse Impacts
- WTO SPS regulations concerning IAS and Pest Analysis of ISPM, OIE's Guidelines for assessing the risk of non-native animals becoming invasive which is considered under the WTO as equal to OIE standards
- CBD's Aichi Biodiversity Target 9: identification of target species, their pathways and ways to control and eradicate them; managing pathways to prevent their introduction and establishment
- Actions need to be taken (1) identify and control the main pathways responsible for species invations; (2) develop border control or quarantine measures to

reduce the likelihood of potentially IAS being introduced, and making ful use of risk analysis and international standards

- Importance of information sharing and partnership for risk assessment(i.e. Global IAS Information Partnership and GEF 6 Program 4 on prevention, control or eradication of IAS
- Global Environment Fund (GEF) priority on islands, prevention, parthway risk management and integrated invasive alien species control including biocontrol and the existing of National Biodiversity Strategies and Action Plans

Second Session:
Implementation of International Standards for Phytosanitary Measures (ISPMs) on Pest Risk Analysis (PRA) on Forest Pests by Dr. Shiroma Sathyapala

Dr. Shiroma oriented the participants on the following:

- FAO's forest protection and health program which aims to safeguard the health and vitality of forests, forest ecosystems, and trees outside forests with special reference to insects, diseases and woody invasive species
- International Plant Protection Convention (IPPC) which aims to prevent introduction and spread of pests; promote fair and safe trade; protect plant life
- Two things associated with risk: probability/likelihood (how likely an event is to happen) and impact (how much of an effect it would have)
- Importance of having common definition of terms e.g. pest: any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products (IPCC); include bacteria, fungi, insects, mites, other plants, nematodes and viruses
- ISPM on PRA specifically ISPM 2 (framework for pest risk analysis), ISPM 3 (guidelines for the export, trade, etc) and ISPM 14
- Guide to implementation of Phytosanitary standards in forestry
- Problems of IAS Identification in ASEAN: (1) Incomplete knowledge of native flora and fauna, (2) Local forest species well adapted to closed tropical forest condition, generally resistant to foreign invasion, (3) Taxonomic expertise lacking/inadequate, (4) Some lists available but little information about ecological impacts, (5) Continuous human disturbance facilitates spread of IAS
- Things needed for effective implementation of the Phytosanitary standards in forestry: (1) Integrated training, and (2) Collaborative studies

Third Session:
IAS science-based approaches in the international policy context by Dr. Andy Sheppard

Dr. Sheppard discussed the following in his presentation:

- Health, environmental, and economic impacts of IAS
- Key pillars of a policy on IAS: (a) Regulation of trade/import/possession/release; (b) Prevention: pathway management, early warning rapid response, eradication; (c) Management: strategies to reduce impacts; (d) Data Access: reporting system,

follow up; and (e) Communication: public awareness and involvement of key stakeholders

- Effectiveness of eradication policies (86%) in terms of using herbicides for weeds and baits for animals
- White list approach (i.e., species allowed to come into a country) and black list approach (species that are banned for entry in a country)
- Challenges in IAS science-based approaches in the international policy: (a) Misconception about exotic species vs IAS; (b) Likely need for assisted migration for rate and threatened species under climate change; (c) Novel ecosystems for novel climates; (d) Societal general ambivalences towards exotic organism; and (e) IAS has not achieve normal socialization and thus having problems in its managements

Fourth Session: Country Reports

Four country reports were presented during Day 1 of the seminar-workshop. Key information shared by the country representatives are given below.

Malaysia Report by Mr. Mohd Sanusi Mohd Kasim

- National Working Group on IAS already created and functioning. Composed of members from research agencies and universities, the working group has developed and published Malaysia's national strategies and action plan for prevention, eradication, containment and control of IAS.
- Several legislations, ordinances, subsidiary laws and guidelines related to control and management of plant and animal pests have been existing since 1952
- Has already a priority list of flora and fauna invasive species
- Major challenge: coordination among concerned agencies on the implementation of existing legislations, ordinances, subsidiary laws, and guidelines

Thailand Report by Dr. Wichan Eiatong

- Has already identified top 5 forest invasive alien plant species
- Communities have explored and used the "benefits" of some IAS (e.g., leucaena as food and fodder, alang-alang grass as roofing materials,water hyacinth for handicraft production)
- Has existing control methods at natural habitats of IAS (e.g., pull, mow, herbicide use, cut, prescribed burning, integrated pest management)
- Four government agencies have been tasked to manage IAS in forests, namely: (1) Department of National Park, Wildlife and Plant (DNP) for Protected areas; (2) Royal Forestry Department (RFD) for Forest management; National forest reserves; (3) Department of Marine and Coastal Resources (DMCR) for Marine and coastal resources; and (4) Office of Natural Resources and Environmental Policy and Planning (ONEP)
- Has several national legislations related to control and management of IAS since 1947
- Major challenges include raising awareness on the roles and impacts of IAS and ensure effective implementation of existing laws to control and manage IAS

Lao PDR Report by Mr. Palikone Thalongsengchanh

- Note: Report generally discussed the programs and activities of the participant's agency and very few information touched on IAS. The country representative was requested to make another report for submission soon.

Indonesia Report by Mr. Adi Susmianto

- 30% of national parks have been invaded by IAS
- Has already a NISSAP from 2003-2020
- Has already identified 4 priority forest invasive alien plant species although no proper risk analysis done yet; priority listing was determined due to the scope of invasiveness of the said species
- Has already developed risk analysis system for marine and agriculture for pre- and post-border which is being implemented by Quarantine Offices
- Recently under the FORIS project, risk analysis system has also been developed for forest invasive alien species
- Specific ministries are assigned to Ministries (Environment and Forestry, Agriculture, Marine and Fisheris), research institutions, and universities as regards IAS control and management
- Has several policies and regulations on IAS
- Has collaborations with regional and international organizations in research and capacity building for control and management of IAS
- Major Challenges: (a) harmonizing risk analysis protocols with other countries in the region, (b) harmonizing enforcement of regulations among related agencies, (c) mainstreaming IAS in education system, (d) Mainstreaming IAS into protected areas management planning, and (e) raising public awareness through effective communication campaigns

Day 2: December 3

First Session: Continuation of Country Report Presentations

Myanmar Report by Ms. Ms. Khim Mar Myint

- Little is known about the status of IAS but a few IAS have been observed throughout the country introduced by water, air and/or land transport.
- Trans boundary movement of IAS is potentially high along the national border of Myanmar with neighboring countries such as India, Bangladesh, China, Laos and Thailand
- From the reference book of "Invasive alien plants in the forest of Asia and the Pacific", 31 Invasive alien plants species found in Myanmar.
- Ministry of Forestry has promulgated the Forest Law (1992) in which the basic principles encompassed to implement the forest policy and the environmental conservation policy, to prevent the dangers of destruction of forest and diversity.
- Has formulated National Biodiversity Strategy and Action Plan (NBSAP) in 2011; contains list of major IAS in Myanmar together with their scientific names,

invasive pathways, distribution, and observed damage or negative impact by these species

- Weed control is through mechanical, chemical and biological methods
- Government authorities concerned in various aspects of invasive species include (a) Ministry of Agriculture and Irrigation (MoAI); (b) Ministry of Environmental Conservation and Forestry (MOECAF); (c) Ministry of Livestock and Fisheries (MoL&F); (d) Ministry of Science and Technology (MoSc&T); (e) Ministry of Education (MoE); and (f) Ministry of Health (MoH)
- Major Challenges: (a) mapping of Invasive species, (b) having effective risk assessment, early detection, rapid response and long-term monitoring of IAS, and (c) Capacity building activities on risk analysis and management of invasive alien plant species

Philippines Report by Mr. Genesis Francisco and Ms. Cecile Garcia

- The Philippine Plant Conservation Committee is in the process of coming up with the list of Invasive Alien Plant Species or plant species introduced deliberately or unintentionally into the country where they become established and cause negative environmental and economic impact, including classification system for determining level of invasiveness/impacts of these species
- Had already developed (final draft) the National Invasive Species Strategy and Action Plan (NISSAP)
- Government agencies concerned in various aspects of IAS include: (a) Department of Environment and Natural Resources (DENR), (b) Department of Agriculture, (c) Palawan Council for Sustainable Development (PCSD), (d) Academe (Department of Education and Commission on Higher Education), and (e) National Museum of the Philippines
- Relevant policies on plant invasive alien species already exist; the country is signatory to 13 IAS-relevant international treaties and protocols
- Major Challenges: (a) conflicting perspective on economic importance of some exotic trees and their impact to forest biodiversity is holding back any interests to pursue management programs for IAS in the forestry sector, (b) Passage of an Executive Order or a law adopting the NISSAP, (c) Passage of Sustainable Forest Management Act where new initiatives to improve forest governance based on science like IAS Management, control and eradication is highlighted, (d) Harmonization/Improvement of the Risk Assessment Procedures, and (e) development of a ccompendium on IAS related researches

Vietnam Country by Mr. Mai Hong Quan and Mr. Mr. Do Van Tu

- From recent national inventory, about 94 species of 31 families were recorded which account for 0.77% of the total current natural species of plants in Viet Nam (12,000 species).
- In the global list of invasive alien plants, 6 species had been found in Viet Nam: *Mimosa pigra, Mimosa diplotricha, Imperatas cylindrica, Acacia holosericea, Eucaliptus urophylla, and Eichhornia crassipes*
- Since September 26, 2013, Ministry of Natural Resources and Environment and Ministry of Agriculture and Rural Development regulates the criteria on IAS identification and listing of IAS

- Vietnam is signatory in 4 key international conventions pertaining to biodiversity: Convention on Biological Diversity (joined in 1994), Ramsar Convention on Wetlands (joined in 1988), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (joined in 1994), and International Plant Protection Convention
- Several policies and ordinances related in various aspects of IAS already exist; circulars on risk analysis and assessment of Alien species, and for testing and licensing of alien species are being developed
- National Strategy on Environmental Protection (2020-2030) and National Biodiversity strategy and Action Plan (2020-2030) already developed since 2012
- Focal government institution for IAS management in Vietnam is the Ministry of Natural Resource and Environment (MONRE) especially the Vietnam Environment Administration; supporting institutions include: Ministry of Agriculture and Rural Development (i.e., Department of Science, Technology and Environment, Department of Plant Protection, Department of Animal Husbandry, Department of Cultivation, Department of Veterinary), Ministry of Finance (i.e., Custom Department), Ministry of Education and Training (i.e., Information and Communication Division), Police, and Provincial/municipal People's authorities and other NGOs
- Major Challenges: (a) Lack of an orientation policy framework for IAS management at different levels; (b) Planning of prevention and control issues is not comprehensive and synchronized; (c) Legislation system has many drawbacks and inconsistencies; legal documents are scattered; (d) Management system are incomplete with overlapping and unclear functions and responsibilities and weak coordination; and (e) Management capacity in IAS is limited

Second Session:
BIOTROP's Research and Capacity Building Experiences in IAPS Risk Analysis by Dr. Soekisman (with special focus on Risk Analysis of Alien Plant Species Invading Mt Gede Pangrango National Park, GPNP)

Dr. Soekisman shared the following information to the participants:

- Vegetation composition, area of coverage, and distribution at GPNP from 1959 to 2009
- Illustration on the application of Baker's (1974) risk assessment system in GPNP which has classified the Risk Category of invasive plant species in GGPNP
- Three conditions that MUST be met for an eradication program to succeed: (a) Every IAS target must be regarded as at risk, (b) IAS must be removed faster than they breed, (c) Re-invasion risks must be effectively zero

Third Session:
Management of Invasive Alien Species through Information Management in the ASEAN Region by Ms. Erica Villavelez

Ms. Villavelez oriented the participants on the ASEAN Biodiversity Clearinghouse Mechanism (chm.aseanbiodiversity.org) as follows:

- designed to support the ASEAN Member States in meeting the AICHI targets
- provides a gamut of services, information, capacity building guides and tools, one of these is Regional database of Invasive Alien Species;
- Holds a total number of 603 IAS mostly derived from global sources such as GISD and CABI Invasive Species Compendium; only species with specified biostatus are included; listing of IAS can be accessed per ASEAN country
- Provides more information on taxonomic classification, author, organism, habitat, and summary of invasiveness
- Next Steps: (a) Encourage sharing and contribution of Invasive Alien Species data in the ASEAN region using: Offline and online species encoding tools, in Darwin Core format – an inter-operable format used and accepted globally, (b) validation of existing IAS records in the ASEAN CHM by IAS experts in the region,(c) Analyse available data and produce Knowledge Products,
- Knowledge products developed by ACB related to IAS e.g., info graphs, policy briefs, IAS video

Fourth Session:
The Australian Pre-Border Weed Risk Assessment and Management System
by Dr. Andy Sheppard

Dr. Sheppard explained the following to the participants:

- Biosecurity Continuum: Where is risk analysis most cost effective? and What data does risk analysis need and how certain is it?
- General overview of the Australian Weed Risk Assessment (WRA) System which is 90% effective at identifying known weeds 70% effective at indentifying known non-weeds
- WRA process and scoring
- WRA strengths and performance, weaknesses and criticisms
- Why WRA prediction is not as easy as it seems? (Hulme, 2012)
- What makes up the impact of an invasive species?
- Potential WRA improvements
- Moving beyond *WRA* towards *Weed Risk Management*

Fifth Session:
Adapting the Australian Pre-Border Weed Risk Assessment System for Use in Other Countries by Dr.Tomoko Nishida

Dr. Tomoko shared the following to the participants:

- List of countries adopting the Australian WRA system
- Modification of the Australian WRA system for use in other countries
- Guidelines for answering questions on the Australian Weed Risk Assessment system
- Number of questions that should be answered

Sixth Session:
The Australian Post-Border Weed Risk Assessment and Management System
By Dr. Stephen Johnson

Dr. Johnson oriented the participants on the following:

- Weed invasion process
- What characters make a plant a weed?
- Social factors – where do weeds come from?
- How to prioritize which weed to work on: post-border week risk management
- Definition of weed risk management
- Differences between Border vs post-border weed risk management; control vs management
- Weed risk management systems used around the world

Day 3: December 4

Workshop 1:
Identifying and Leveling Off Gaps in Risk Analysis of Forest IAS in Southeast Asia and Presentation of Outputs

For this workshop, the participants were divided into four groups to discuss and agree on the following: (a) general gaps in terms of existing policies, coordination mechanism, methods, and understanding of terminologies and concepts of risk analysis of forest invasive alien plant species; and (b) gaps in the risk analysis process (i.e., hazard identification, risk assessment, risk management, and risk communication). A resource person was assigned to each group to assist in the discussion.

Workshop 2:
Workshop on Proposing Solutions on the Gaps in Risk Analysis of Forest IAS in Southeast Asia and Presentation of Outputs

Following the same group assignments, the participants were requested to propose solutions to address the gaps in risk analysis of forest IAS in Southeast Asia that they identified during Workshop 1.

Outputs were presented by group representatives after each workshop. Dr. Shiroma Sathyapala of FAO and Dr. Jess Fernandez facilitated the plenary discussions and synthesis.

Attachments D and **E** contain the workshop outputs.

Day 4: December 5

First Session:
A Review of the Global Protocols and Agreements Related to IAS by Dr. Junko Shimura

In this session, Dr. Junko emphasized the importance of carrying out risk analysis of invasive alien species in the context of existing National Invasive Species Strategies and Action Plans (NISSAP) as part of National Biodiversity Strategies and Action Plans (NBSAP) towards helping achieve the Global Biodiversity Strategic Goals particularly Aichi Target 9.

Second Session:
Contexts and Situations Needed to Support Forest IAPS Risk Analysis System by Dr. Stephen Johnson

Dr. Johnson stressed the need strengthen the following ensure effective implementation of any risk analysis system:

- Public awareness campaigns on the impacts of IAS
- Inter-country and inter-agency collaboration in research, capacity building, and policy formulation
- Continuous exchange and updating of information among researchers, decision makers, and the general public

Third Session:
Presentation and Consensus Building on Seminar-Workshop Recommendations by Dr. Shiroma Sathyapala and Dr. Jess C. Fernandez

Based on the presentations and workshop outputs, the resource persons crafted a list of 5 recommendations as one of the outputs of the seminar-workshop. These recommendations were presented by Dr. Shiroma and Dr. Fernandez presented during a plenary session for discussion and consideration of the participants. The plenary session in the end generated 7 recommendations (See Section on Seminar- Workshop Recommendations).

Fourth Session:
Ways to Move Forward in Implementing Identified Research and Capacity Building Activities by Dr. Jess C. Fernandez

Dr. Fernandez presented to the participants and resource persons 24 Matters for Action towards creating impact and producing the proceedings of the seminar-workshop. **Attachment F** lists these Matters for Action approved by the participants and resource persons.

Closing Program

In a simple closing ceremony, BIOTROP Director Prof. Dr. Bambang Purwantara congratulated and thanks the participants, resource persons, and partner-institutions for

contributing to the success of the seminar-workshop. He encouraged everyone to continue the collaboration on the subject matter for a better socio-economic development and environmental sustainability in the SEA region. He then handed over certificates of attendance to the participants, and certificates and tokens of appreciation to the resource persons.

Seminar-Workshop Recommendations

Based on the resource persons' presentations, participants' country reports, small group workshop outputs, and plenary discussions, the seminar-workshop generated the following recommendations to further the implementation of a more harmonized and effective risk analysis of forest invasive alien plant species in Southeast Asia:

1. In collaboration with UN agencies and other relevant international and regional organizations, develop a region-wide long- (i.e., graduate study and fellowship programs) and short-term (i.e., training, seminar workshops, policy dialogues, etc.) capacity building program to improve individual and institutional capabilities to address gaps in implementing risk analysis methodologies for forest invasive alien plant species.

2. Enhance the awareness and implementation of National Invasive Species Strategies and Action Plan (NISSAP) as part of National Biodiversity Strategies and Action Plan (NBSAP) among relevant stakeholders.

3. Enhance the awareness and implementation of existing international standards (i.e., ISPMs, FAO procedure, etc.) in collaboration with relevant parties.

4. Develop program/project research proposals in collaboration with other relevant institutions at both national and regional levels towards addressing gaps in risk analysis of forest Invasive alien plant species (i.e., from goal setting and hazard identification, risk assessment, risk management, and risk communication) which are aligned with NIISAPs and NBSAPs.

5. Develop communication materials and policy instruments to improve public and decision makers' awareness and action on helping to understand the importance of preventing the spread and establishment of forest invasive alien plant species and their economic, social and environmental impacts.

6. Mainstream invasive alien species as a subject matter in all education levels where appropriate.

7. Review existing IAS networks and databases both regionally and globally on sharing and utilizing FIAPS information and affiliate where necessary in order to enhance knowledge sharing and understanding of international and regional trends for application at national level.

Attachment A: Program of Activities

Day 1/December 2
Moderator: Dr. Jess C. Fernandez

Day/Time	Activity	In-Charge
8.30 am 9.00	• Registration • Opening Program and Overview of Seminar-Workshop	
9.30	Coffee/Tea Break	
10.00 11.00	• Current Global Protocols and Initiatives in Biodiversity Conservation with special focus on IAS Control and Management • Implementation of International Standards for Phytosanitary Measures (ISPMs) on Pest Risk Analysis (PRA) on Forest Pests	Dr. Junko Shimura Dr. Shiroma Sathyapala
12.00	Lunch Break	
1.30 pm	• IAS science-based approaches in the international policy context	Dr. Andy Sheppard
3.00	Coffee/Tea Break	

3.30	• Country Reports on IAS Inventory, and Regulations and Challenges in Risk Analysis and Management
	  • Malaysia
	  • Thailand
	  • Lao PDR
	  • Indonesia
		Country Representatives

4.30	• General Discussion	
6.45	• Welcome Dinner (Hosted by FORIS)	

Day 2: December 3
Moderator: Dr. Sri Sudarmiyati

Time	Activity	In-Charge

8.45 am	• Continuation of Country Reports
	  • Philippines
	  • Myanmar
	  • Vietnam
		Country Representatives

10.00	Coffee/Tea Break	
10.30	• BIOTROP's Research and Capacity Building Experiences in IAPS Risk Analysis • Management of Invasive Alien Species Through Information Management in the ASEAN Region	Dr. Sukisman Ms. Erica Villavelez
12.00	Lunch Break	
1.30	• The Australian Pre-Border Weed Risk Assessment and Management System • Adapting the Australian Pre-Border Weed Risk Assessment System for Use in Other Countries	Dr. Andy Sheppard Dr .Tomoko Nishida
3.15	Coffee/Tea Break	
3.45	• The Australian Post-Border Weed Risk Assessment and Management System • General Discussions/Day's Wrap Up	Dr. Stephen Johnson
Evening	FREE	

Day 3: December 4
Moderators: Dr. Shiroma Sathyapala and Dr. Jess C. Fernandez

Day/Time	Activity	In-Charge
Day 3/ 4 Dec 8.45 am	• Workshop on Identifying and Leveling Off Gaps in Risk Analysis of Forest IAS in Southeast Asia and Presentation of Outputs	Dr. Shiroma Sathyapala
10.15	Coffee/Tea Break	
10.45	• Workshop on Proposing Solutions on the Gaps in Risk Analysis of Forest IAS in Southeast Asia and Presentation of Outputs	Dr. Jess Fernandez
12.00	Lunch Break	
1.30 pm	• Collaborative Options for IAPS Risk Analysis Research in Southeast Asia	Dr. Andy Sheppard
3.00	Coffee/Tea Break	
3.30	General Discussions/Day's Wrap Up	

Day 4: December 5
Moderator: Dr. Stephen Johnson

Day/Time	Activity	In-Charge
8.45 am	• A Review of the Global Protocols and Agreements Related to IAS	Dr. Junko Shimura
9.30	• Contexts and Situations Needed to Support Forest IAPS Risk Analysis System	Dr. Stephen Johnson
10.15	Coffee/Tea Break	
10.45	• Presentation and Consensus Building on Seminar-Workshop Recommendations	Dr. Shiroma Sathyapala & Dr. Jess C. Fernandez
12.00	Lunch Break	
1.30	• Plenary Discussion on Ways to Move Forward in Implementing Identified Research and Capacity Building Activities	Dr. Jess C. Fernandez
2.30	• Seminar-Workshop Evaluation	Dr. Jess C. Fernandez
3.00	Coffee/Tea Break	
3.30	• Closing Program	

Attachment B
List of Seminar Workshop Participants

Name	Contact Details
Bhutan	
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Attachment C:
Resource Persons and Facilitators

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Attachment F
Matters for Action

Action Needed	In-Charge	Expected Implementation Date
1. Refine country reports in narrative format according to the prescribed contents (especially including the priority list of FIAPS)	Country representatives	8-26 December 2014
2. Submit the revised version of country reports to SEAMEO BIOTROP	Country representatives	29 December 2014
3. Write short report/Feedback and share highlights of the seminar workshop to respective supervisors and colleagues including NPPO contact persons if possible	All participants	Anytime from 6-29 December 2014
4. Write and disseminate a news article on the seminar workshop for website uploading	SEAMEO BIOTROP	8-12 December 2014
5. Write seminar workshop completion report	SEAMEO BIOTROP	8-30 December 2014
6. Submit seminar workshop completion report to FAO	SEAMEO BIOTROP	31 December 2014
7. Package and disseminate a promotional material about the recommendations of the seminar workshop to institutions of participants and resource persons and other relevant government bodies concerned with risk analysis of forest invasive alien plant species	SEAMEO BIOTROP	8December 5 January 2015
8. Organize documents and outputs seminar workshop and submit proposed content outline of seminar workshop proceedings for approval of FAO	SEAMEO BIOTROP	5-9 January 2015
9. Write first draft of seminar workshop proceedings	SEAMEO BIOTROP	12 January-17 February 2015
10. Submit first draft of seminar workshop proceedings to resource persons/partner-institutions for comments and suggestions	SEAMEO BIOTROP/	18 February 2015
11. Review first draft of seminar workshop proceedings and submit	Resource Persons/ Partner Institutions	19-23 February

back to BIOTROP		
12. Revise draft of seminar workshop proceedings according to comments and suggestions from resource persons	SEAMEO BIOTROP	24-27 February 2015
13. Submit revised draft version of the seminar workshop proceedings to editor	SEAMEO BIOTROP	2 March 2015
14. Edit seminar workshop proceedings	Hired editor/SEAMEO BIOTROP	3-9 March 2015
15. Package the seminar workshop proceedings	SEAMEO BIOTROP	2-17 March 2015
16. Send the packaged draft of the seminar-workshop proceedings to FAO for comments and suggestions	SEAMEO BIOTROP	18 March 2015
17. Review the packaged draft of the seminar-workshop proceedings and submit back to SEAMEO BIOTROP	FAO	19-25 March 2015
18. Revise the packaged draft of the seminar-workshop proceedings according to FAO's comments and suggestions	SEAMEO BIOTROP	26-31 March 2015
19. Send packaged version of seminar workshop proceedings to publishing company for blue print of seminar workshop proceedings	SEAMEO BIOTROP	1-6 April 2015
20. Proofread blue print of seminar workshop proceedings	SEAMEO BIOTROP/FAO	7-10 April 2015
21. Print copies of seminar workshop proceedings	Printing Press	13-19 April 2015
22. Develop proposals for follow up projects/activities and explore funding	SEAMEO BIOTROP/ Partner Institutions/participants	1 April - throughout 2015
23. Share available IAS information with ACB	Participants	Anytime
24. Develop follow up training course on WRA at the regional level (i.e. Asia in general)	BIOTROP, partners, and participants	2015/2016