

Building capacity to combat impacts of aquatic invasive alien species and associated transboundary pathogens in ASEAN countries

Reported by

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Invasive alien species (IAS) — non-native plants, animals or pathogens that may cause economic or environmental harm or human health problems — can negatively impact sustainable development in countries that depend on agricultural, fishery, and forestry resources for economic prosperity. Aquatic IAS, in particular, do not respect geopolitical borders and can negatively affect the international trade and transport of aquaculture products. To address these impacts, a workshop “Building capacity to combat impacts of aquatic invasive alien species and associated transboundary pathogens in ASEAN countries” was held in Penang, Malaysia, on the 12th-16th July 2004. The workshop was supported by a U.S. Department of State (State) grant, hosted by the Department of Fisheries of the Government of Malaysia and organized by the Network of Aquaculture Centres of Asia (NACA) in collaboration with ASEAN, FAO, the WorldFish Center, and State. Seventy-five delegates from ASEAN⁶ member countries participated, including resource persons with experience in aquatic invasive alien species (IAS) and aquatic animal pathogens, and representatives of regional and international organizations, research institutes, universities and the private sector⁷.

Responding to recommendations of two other meetings held in the region in 2002 and 2003^{8,9} the workshop was intended to assist ASEAN countries in building their national capacities to combat the impacts of aquatic IAS and the pathogens associated with aquaculture and the transboundary shipment of live aquatic organisms. Aquatic IAS are of increasing concern in ASEAN because of the social and economic importance of the fishery and aquaculture sectors. Aquatic animal diseases in particular have caused significant damage in recent years, and are now recognised as a major risk and a primary constraint to the growth of the ASEAN aquaculture sector. The aquaculture industries alone provide several billion dollars of export earnings to ASEAN

economies, so the economic and social risks are substantial. Therefore cooperation among ASEAN countries in addressing the issue was considered essential.

WORKSHOP OBJECTIVES

The specific objectives of the workshop were to:

- Review progress in implementing recommendations from an earlier Global Invasive Species Program Workshop⁸ and the FAO/NACA, “Asia Regional Technical Guidelines on Health Management for the Responsible Movement of Live Aquatic Animals and Beijing Consensus and Implementation Strategy¹⁰” and identify further actions to support their implementation in ASEAN, and examine other relevant regional and international initiatives on aquatic invasive species and identify specific actions for their possible implementation in ASEAN.
- Examine relationships among transboundary aquatic animal pathogens and aquatic invasive alien species in the ASEAN region, including long-term impacts of alien diseases in the region.
- Review national policies and legislation as well as compliance to international treaties and conventions dealing with aquatic IAS, and identify specific actions for their implementation in ASEAN.
- Identify current gaps in knowledge and information for dealing with aquatic IAS and aquatic animal pathogens, and develop national and regional decision support tools, focusing on design and incorporation of information and other communication media pertaining to invasive species and the risks of their introduction to ASEAN.

- Support national and regional awareness and capacity building for aquatic species at various levels, focusing on risk analysis measures, improving information sharing, surveillance and reporting and networking.

WORKSHOP FINDINGS: THE WAY FORWARD

Based on the results of technical and country-specific presentations (see Table) participants concluded that aquatic invasive species in ASEAN negatively impact aquatic biodiversity, and may affect the social and economic well being of people in the ASEAN region. However, participants also recognized the positive social and economic benefits that have come from the introduction and farming of some alien aquatic species in the region. Participants agreed that the best way forward is to minimize the risks and costs associated with negative impacts of aquatic IAS and aquatic animal pathogens whilst capturing the social and economic benefits possible through responsible aquaculture of alien species. Specifically, they recommended:

- Management of aquatic IAS and associated pathogens is imperative and should be

encouraged and implemented in all ASEAN countries.

- National strategies should be developed consistent with obligations under existing international treaties and instruments¹¹ and in harmony with strategies for other IAS, including aquatic plants and ornamental fish. National strategies, coordinated through national focal points, should be based on impact assessment and management of alien species, where they are already established, and use of ecological and environmental risk analysis for proposed new introductions.
- National strategies should be implemented within a legitimate regional framework supported and endorsed by ASEAN.
- ASEAN member countries should have the necessary institutional and human resources to adopt a harmonized regional strategy. Bridging development gaps and capacity building across member countries is therefore necessary. Special attention should be given to capacity building among Cambodia, Lao PDR, Myanmar and Vietnam.



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More than 70 officials from Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, USA and representatives from the Asian Institute of Technology (AIT), Asia-Pacific Economic Cooperation (APEC), ASEAN Secretariat, AusVet-Australia, CAB International, Deakin University (Australia), FAO, IUCN, MRC, Multimedia Asia, NACA, OIE, PhilRice, SakhNIRO-Russia, SEAFDEC-AQD, Universiti Putra Malaysia and World Fish Centre successfully participated in this pioneering initiative to better understand the relationship between aquatic invasive alien species (IAS) and associated transboundary pathogens in ASEAN countries. The workshop, held at the Grand Plaza Parkroyal Penang, Batu Ferringhi Beach on 12-16 July 2004, was funded by the US Department of State and implemented by NACA in cooperation with Malaysia's Department of Fisheries, FAO, World Fish Centre and various other regional partners

- In-country IAS impact assessment and risk analysis training should be promoted and implemented to establish core expertise in these practices in all ASEAN countries. Experiences in risk analysis and impact assessment should be shared among ASEAN.
- Networking, information exchange and cooperation among concerned agencies, industry, trading partners and countries sharing common watersheds or waterways is recommended for cost-effective use of resources in support of ASEAN in achieving the goal of effective management of aquatic IAS and associated aquatic animal pathogens.
- Assistance should be sought from regional and international organizations to implement the workshop recommendations, including from the organizers and participants of this workshop and other regional and international organizations. Progress in implementing the workshop recommendations should be assessed in three years.

These recommendations in this Way Forward summary were presented to the ASEAN Secretariat as a starting point for coordinated regional action, through the ASEAN Sectoral Working Group on Fisheries and other bodies. Final proceedings, including full text of the technical and country papers, will be published by NACA in January 2005.

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⁸Recommendations from the Regional Workshop on "Prevention and Management of Invasive Alien Species: Forging Cooperation throughout South and Southeast Asia", 14-16 August 2002, Bangkok, Thailand. www.usa.or.th/embassy/reo/reo-wrkshp.htm.

⁹Workshop on International Mechanisms for the Control and Responsible Use of Alien Species in Aquatic Ecosystems, held 27-30 August 2003, in Xishuangbanna, People's Republic of China.

¹⁰www.fao.org/DOCREP/005/X8485E/X8485E00.HTM

¹¹These include the Convention on Biological Diversity (CBD), International Maritime Organisation (IMO), World Trade Organisation (WTO), World Animal Health Organisation (OIE) and Food and Agriculture Organisation of the United Nations (FAO).

Table 1. List of technical papers presented during the Workshop on “Building capacity to combat impacts of aquatic invasive alien species and associated transboundary pathogens in ASEAN countries”, 12-16 July 2004, Penang, Malaysia

Session II – Workshop objectives, and selected technical overviews of invasive alien species and Associated transboundary pathogens

Introductory remarks on objectives and organisation of the workshop – Michael J. Phillips (NACA)
CBD COP-7 Decisions on alien species that threaten ecosystems, habitats or species - Chan Han Hee (Department of Agriculture, Malaysia)
An overview of international initiatives, treaties, agreements and management actions addressing invasive alien species – Jeffrey P. Fisher (US-State Department)
Place of transboundary aquatic animal pathogens (TAAPs) within the invasive alien species (IAS) category: a review” – Rohana P. Subasinghe (FAO) and Melba B. Reantaso (Maryland Department of Natural Resources, USA)
Current knowledge of aquatic invasive alien species in ASEAN and their management in the context of aquaculture development” – A.G. Ponniah and Norainy Mohd Husin (World Fish Centre)
Transboundary aquatic animal pathogens in ASEAN and their management” – CV Mohan, Brett Edgerton, and Michael J. Phillips (NACA)
Aquatic alien species and their contribution to aquatic production, food security and poverty alleviation” – Devin Bartley, Valerio Crespi, Isabel Fleischer and Rohana P. Subasinghe (FAO)

**Session III – Country Status Paper Presentations. Part I: Aquatic Invasive Alien Species
Part II: Associated Trans-boundary Aquatic Animal Pathogens**

Brunei Darussalam - Hajah Laila Haji Hamid
Cambodia - Bun Racy and Hav Viseth
Indonesia - Hardjono and Agus Sunarto
Lao PDR - Nivath Phanaphet
Malaysia - Thalathiah Saidin and V. Palanisamy
Myanmar - Minn Thame and Myat Myat Htwe
Philippines - Simeona E. Regidor and Joselito R. Somga
Singapore - J.J. Loo
Thailand - Supranee Chinabut and Somkiat Kanchanakhan
Vietnam - Phan Thi Van

Session IV: Case Studies

Case study on the invasive Golden Apple snail in ASEAN - Ravindra C. Joshi, A.G. Ponniah, Christine Casal and Norainy Mohd Husin (World Fish Centre)
Tilapias are alien to Asia: But are they friend or foe? - Sena De Silva (Deakin University, Australia)
Movements of economically important penaeid shrimp in Asia and the Pacific - Simon Funge-Smith and Rohana P. Subasinghe (FAO) and Michael J. Phillips (NACA)
The special danger of viral infections in crustaceans - Tim W. Flegel (Mahidol University, Thailand)
Key freshwater crustacean pathogens of concern to ASEAN - Brett Edgerton and CV Mohan (NACA)
Mollusc pathogens of concern to ASEAN - Melba B. Reantaso (MD Department of Natural Resources, USA) and Franck C.J. Berthe (IFREMER, France)
Marine and freshwater finfish pathogens of concern - Mohamed Shariff (UPM, Malaysia)
Need for an Institutional Network for managing aquatic exotic species in Indochina - Amara Yakupitiyage (AIT, Thailand)
Risk Analysis as a Tool for the Management of Alien Aquatic Animal Diseases - Kevin Amos (US Department of Commerce and Interior)
Risk Analysis for determining invasive potential, risks, and appropriate management for non-native aquatic species – Jeffrey P. Fisher (US-State Dept.)
Risk analysis frameworks and tools for management of aquatic invasive alien species and associated transboundary pathogens - Infrastructure and Capacity Requirements – Chris Baldock (AusVet, Australia)

Special Presentations

Tracking pathogens through species introductions: a database mapping approach - Christine Marie V. Casal, Allan N. Palacio, Melba Reantaso, Aldus Ponniah, Norainy Mohd Husin, Boris Fabres and Rainer Froese (World Fish Centre and MD Department of Natural Resources, USA)
CAB International: its activities related to information on invasive alien species - S.S. Sastroutomo, K.Y. Lum and W.H. Loke (CABI, Malaysia)
FishBase: towards building a tool to assess species invasiveness - Christine Marie V. Casal (World Fish Centre)
The Global Invasives Species Information Network (GISIN), expert meeting summary and the way forward” - Annie Simpson and Soetikno S. Sastroutomo (USGS and CABI Malaysia)