

Bioinvasion and Global Environmental Governance: The Transnational Policy Network on Invasive Alien Species

Malaysia's Actions on IAS

Description⁹

Malaysia, a federation that consists of thirteen states and three federal territories, in Southeast Asia has a total landmass of 329,847 square kilometers (127,355 sq mi). It has a population of over 25 million people who reside in the Peninsula and the states of Sabah and Sarawak on the island of Borneo. In 1948, the British-ruled territories on the Malay Peninsula formed the Federation of Malaya, which became independent in 1957. Malaysia was formed in 1963 when the former British colonies of Singapore and the East Malaysian states of Sabah and Sarawak on the northern coast of Borneo joined the Federation.

In terms of geography, the two distinct parts of Malaysia, separated from each other by the South China Sea, share a largely similar landscape in that both West and East Malaysia feature coastal plains rising to often densely forested hills and mountains, the highest of which is Mount Kinabalu at 4,095.2 metres (13,435.7 ft) on the island of Borneo.

Malaysia is a federal constitutional elective monarchy. The federal head of state of Malaysia is the *Yang di-Pertuan Agong*, commonly referred to as the King of Malaysia. The Yang di-Pertuan Agong is elected to a five-year term among the nine hereditary Sultans of the Malay states; the other four states, which have titular Governors, do not participate in the selection. Malaysia is a founding member of the Association of Southeast Asian Nations and participates in many international organizations such as the United Nations.

Overview of Biodiversity

Malaysia is one of the world's megadiverse countries. The flora of Malaysia is very rich and conservatively estimated to contain about 15,000 species of higher plants with over 1,100 species of ferns and fern allies, many of which are endemic. The fungi constitutes another important flora diversity, but the total number of species is not known.

- [CBD Country Profile](#)
- [Earth Trends Country Profile on Biodiversity and Protected Areas](#)

Legislation relating to IAS

- The Quarantine Act of 1976 and the [Plant Quarantine Regulation of 1981](#)
- Plant Variety Protection Bill 2003

Government Agencies/Programs/Ministries dealing with IAS

- [The Ministry of Agriculture](#)
- Plant Variety Office
- [Department of Wildlife and National Parks \(DWNP\)](#)
- [The Department of Fisheries \(DOF\)](#)

- The Forestry Department, [Forestry Department of Peninsular Malaysia](#)
- [The Department of Veterinary Services](#)
 - Animal Quarantine Office
- Plant Quarantine Office

Major Invasive Alien Species²

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| Acacia confusa (tree, shrub) | Pomacea canaliculata (mollusc) |
| Aristichthys nobilis (fish) | Pycnonotus jocosus (bird) |
| Avian Influenza Virus (micro-organism) | Rottboellia cochinchinensis (grass) |
| Chromolaena odorata (herb) | Striga asiatica (herb) |
| Cyperus papyrus (bush) ¹ | Technomyrmex albipes (insect) |
| Clidemia hirta (shrub) | Trogoderma granarium (insect) ³ |
| Mimosa pigra (shrub) | Vibrio cholerae (micro-organism) |

Native Species Exported/Introduced to Non-Native Environments²

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|---|---|
| Abelmoschus moschatus (herb, shrub) | Landoltia punctata (aquatic plant) |
| Adenanthera pavonina (tree) | Limnophila sessiliflora (herb) |
| Acanthogobius flavimanus (fish) | Microstegium vimineum (grass) |
| Caesalpinia decapetala (tree, shrub) | Monopterus albus (fish) |
| Charybdis japonica (crustacean) | Perna viridis (mollusc) |
| Clarias batrachus (fish) | Rhodomyrtus tomentosa (tree, shrub) |
| Commelina benghalensis (herb) | Rubus moluccanus (vine, climber, shrub) |
| Hiptage benghalensis (vine, climber, shrub) | Xylosandrus compactus (insect) |
| Hypophthalmichthys molitrix (fish) | |

Table 1 Actions to prevent, detect and manage IAs categorized into three themes: biodiversity, human health, and economic

Note: Actions (such as projects, publications and programs) are classified according to the most obvious theme but may also fit into the dimensions of another.

Theme	Action
Biodiversity	<ul style="list-style-type: none"> • Two most important pieces of legislation with regards to invasive species are the Quarantine Act of 1976 and the Plant Quarantine Regulation of 1981. Under the Quarantine Act, 7 of the most dangerous IAS are being controlled through extensive prevention and eradication programmes carried out by the Ministry of Agriculture.⁴ • Plant Variety Protection Bill includes provisions for invasive species and for phytosanitary protection. It is carried out by the Plant Variety Office, which is creating a national register of plant varieties. Since its creation more than 100 varieties of ‘durian’ has been registered, 200 of mangoes, 35 of jackfruits, 40 of ‘cempedak’ and other varieties of fruit plants.¹⁰ • The Department of Wildlife and National Parks (DWNP) is in the

	<p>process of conducting assessments for forest IAS, with a particular focus on protected areas. The DWNP also provides border controls, quarantine measures, and mitigation of impacts through eradication, containment and control. Thus there are established quarantine procedures, requirements for import permits, inspections at entry points, post entry quarantine and risk analysis, and phytosanitary compliance requirements.⁴</p> <ul style="list-style-type: none"> • The DWNP’s National Parks Management strategies includes a component on Management of Biodiversity Resources: The purpose of this activity is to conserve biodiversity <i>in-situ</i> through activities such as habitat enrichment, controlling the spread of invasive alien species and protection of biodiversity through zonation of ecosystem which are important for biodiversity conservation. • The Department of Fisheries (DOF) implements regulations on the import of non indigenous species for aquaculture.⁴ • Management plans are in place for a few invasive species that have commercial uses such as <i>Acacia mangium</i> and <i>Tilapia</i>.⁴ • The Alien Invasive Species Committee, combined effort of the Ministry of Agriculture and the Department of Fisheries, identifies and manages invasive species that threatened domestic crops and the fisheries sector. This committee will be expanded to include the Forestry Department, the Department of Wildlife and National Parks and other related agencies.⁴ • To comply with the International Plant Protection Convention, Applicants are required to fill out either an import application form or export application form from the Plant Quarantine Office of the Ministry of Agriculture. Planting material subject to post entry quarantine inspection, require a report of this inspection carried out by officers of the State Crop Protection.⁶ • There are 7 species that are listed as especially dangerous by the quarantine act and are being controlled through extensive prevention and eradication programmes:⁴ <ol style="list-style-type: none"> 1. Khapra Beetle (<i>Trgoderma granarium</i>) 2. Golden Snail (<i>Pomacea canaliculata</i>) 3. Papaya Ringspot Virus Disease 4. Banana Bunchy Top Virus Disease 5. <i>Cyperus papyrus/Cyperus japonica</i> 6. <i>Rottboellia cochinchinensis</i> 7. Rice Blast Disease.
Human health	<ul style="list-style-type: none"> • For animal health and safety, different regulations exist for different live animals and birds species, as well as different livestock products; there are also different forms required for live animals or animal products.⁷ • The Department of Veterinary Services is empowered to impose the quarantine of animals and birds under several legislative means:⁸ <ul style="list-style-type: none"> - Animal Ordinance, 1953

	<ul style="list-style-type: none"> - Animal Rules, 1962 - Animal Importation Order, 1962 - Federal Animals Quarantine Station (Management and Maintenance) By-Law, 1984. • Quarantine procedures (for plants and animals) differ based on the country of importation (Schedule Countries: Australia, New Zealand, United Kingdom, Ireland, Northern Ireland, Singapore, Brunei, Japan and Sweden; Non-Scheduled Countries: all other nations) under the Plant Quarantine Regulation of 1981.⁸
Economic	<ul style="list-style-type: none"> • Local importers can obtain a special permit for species imports. There are three types of permits: for live animal imports, for animal products, for meat cuts and fresh chicken.⁷

Table 2 Actions on IAS in cooperation with other countries

Agreement/ Organization	Countries/ Member	Action
The Asia-Pacific Forest Invasive Species Network (APFISN)	Australia, Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, Japan, Republic of Korea, Laos, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, US, Vanuatu, Vietnam, Tuvalu, Kiribati, France, and Russia	<p>The APFISN has been established as a response to the immense costs and dangers posed by invasive species to the sustainable management of forests in the Asia-Pacific region. It is a cooperative alliance of 32 member countries of the Asia-Pacific Forestry Commission (APFC). The network operates under the umbrella of APFC which is a statutory body of the Food and Agricultural Organization of the United Nations. The APFISN focuses on inter-country cooperation that helps to detect, prevent, monitor, eradicate and/or control forest invasive species in the Asia-Pacific region.</p> <ol style="list-style-type: none"> 1. Raises awareness of FIS throughout the Asia-Pacific region 2. Exchanges and shares information on FIS among member countries 3. Facilitates access to technical expertise, research results and training and education opportunities 4. Strengthens capacities of member countries to conduct research, manage FIS and prevent new incursions 5. Develop strategies for regional cooperation and collaboration in combating threats posed by FIS

Case Studies

Managing alien invasive species in Malaysia

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The Asia-Pacific Forest Invasive Species Network Country Report (no date)

Introduction

In the context of CBD, IAS is one that threatens biological diversity but in the broader context it is one that has negative impacts in any area such as agriculture, human development, human health as well as biodiversity (Roger, 2003). The problem of insect pests, whether endemic or exotic, has always been a major concern in agriculture. The problem of alien insect pest species has become more significance due to the global interest in biodiversity. The driving force behind this problem is the apparent breakdown of bio-geographical borders due to increasing international trade and globalization exacerbated by the modern modes of transportation that enhance the probability of biological invasions.

[...]

Malaysia's encounter with invasive species

Prevention is the first line of defense against any invasive pest. The Malaysian Plant Quarantine Act 1976 and Plant Quarantine Regulation 1981 are the two laws that aim to prevent the entry and spread of noxious plants and pests of plants that can threaten the agriculture industry. Besides alien invasive pest species, the Quarantine Act also has provision to control outbreaks of endemic pest. In regulating the alien invasive pest species, the Quarantine Regulation has listed 240 species of insects, fungus, viruses and weeds that are prohibited from importation, possession or keeping. This List, which is a dynamic one, is gazetted in the Fourth Schedule of the Regulation. Thus, all goods that harbor pests in the List will be treated or destroyed immediately. Apart from the prevention of entry, the Quarantine Act and the Quarantine Regulation also have provision to contain, eradicate or control of any dangerous pest either foreign or endemic found in the country. This provision has given adequate authority to the Department of Agriculture to call the relevant bodies or agencies to collaborate and enforce any action to eradicate or control this pest. The Department of Agriculture, with 250 enforcement officers stationed in all the 49 entry points, inspects all agricultural goods that are imported into the country

Despite the stringent quarantine protocol, invasive pests still escaped quarantine barriers as evidenced by the number of recent Malaysian interceptions (Table 1). In the year 2000, a total of 580 agricultural consignments with pests were intercepted. However, only 82 species of arthropods belonging to 8 orders and 41 families were identified. Out of this total, three species (*Trogoderma granarium*, *Ceratitis capitata* and *Diatrea* sp.) were pests gazetted under the present quarantine Act (Wan Normah and Asna, 2001). The recent growth of the highland (temperate) horticultural industry has also been conducive towards the increase in the number of invasive species, particularly green house pests such as whiteflies and leafminers. A similar situation had been reported in other countries such as Japan (Kiritani, 1999). Commercial activities do enhance the transnational spread. For example, Tan and Lim (1985) found that

between 18.5 –38.9% of English cabbage heads imported from Indonesia were infested with insects.

[...]

Conclusion

Based on the evidence to date, there are many gaps and needs in the current management strategy against invasives. There are indeed many areas that need to be strengthened to effectively manage the problem. Against the backdrop of resource limitation, some of the urgent areas that need to be pursued in future are as follows:

1. Review and update existing list (Fourth Schedule) of prohibited species with proper pest risk analysis (PRA)
2. Review, update and amend the existing sanitary and phytosanitary measures
3. Build R&D capacities and strengthen competencies
4. Increase public awareness to problems of invasives

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