

**For discussion on
23 March 2020**

**Legislative Council Panel on Environmental Affairs
Control of Invasive Alien Species**

Purpose

This paper informs Members and seeks their views on the measures taken by the Government to manage invasive alien species (IAS).

Impact of Invasive Alien Species on Global Ecology

2. IAS refer to non-native species that have been established in the local natural environment, and caused adverse impact on natural ecology, society or economy.

3. Under the influence of globalisation, IAS have caused problems in many parts of the world, including disrupting ecological balance, affecting agriculture and fisheries and causing economic losses. The Convention on Biological Diversity (CBD) requires Parties to act so that “*invasive alien species and pathways are identified and prioritised, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment*”. The approach recommended by CBD is widely adopted internationally for combating the threats of IAS, which involves prioritising management efforts through a risk assessment protocol and adopting the strategy of using prevention, early detection and rapid response as the main defence supplemented with appropriate control and management measures. To ensure scientific rigour in the management of IAS, conducting relevant researches is also an important component of the strategy.

Invasive Alien Species in Hong Kong

4. There are a considerable number of alien species in Hong Kong. For instance, of some 3 000 plant species recorded locally, about one third are alien, some of which are common fruit trees (e.g. Longan, Lychee and Papaya) and ornamental plants (e.g. Flame Tree, Kwai-fah and Rose). Alien species are introduced to Hong Kong in several major pathways which are either intentional or unintentional. Intentional pathways include introductions for the purpose of horticulture, aquarium pet breeding, agriculture and aquaculture.

Most unintentional introductions are through freights, such as stowaways in cargoes, marine organisms in ballast water and organisms imported along with plants and soil.

5. Not all alien species are invasive. Most alien species do not cause conspicuous impact on local ecology, and many could even bring benefits to agriculture, horticulture, forestry and aquaculture. To determine whether an alien species is invasive, several factors, including its introduction pathway, distribution in the wild, reproductive rate and its impact on local ecology, have to be considered. However, there is currently a paucity of information on alien species in Hong Kong. Researches and data on IAS are mainly focused on temperate regions, and hence of limited reference value to Hong Kong which is in the subtropical zone.

6. Hong Kong does not have a checklist of IAS for the time being. For the few alien species causing impact on local ecology or nuisance to people, the Government has been taking control measures to minimise their impact based on actual circumstances. For some common IAS in Hong Kong, control measures currently in place include:

- (a) ***Mikania micrantha*** (originated in Central and South America, see Photo 1) – This fast-growing plant climbs over other plants and overshadows them, obstructing their growth or even killing them. To minimise its impact on natural ecosystems, the Agriculture, Fisheries and Conservation Department (AFCD) regularly monitors country parks, special areas and sites of special scientific interest, and removes any *Mikania micrantha* upon detection. Other departments also carry out appropriate vegetation maintenance measures for plants under their purview. Such responsibilities are taken up by owners and property managers of private land. AFCD has also produced technical guidelines on the identification and handling of *Mikania micrantha*, which was uploaded to the departmental webpage for public reference.
- (b) ***Leucaena leucocephala*** (originated in Central America, see Photo 2)– It mainly grows in wasteland at low altitudes or fringes of sparse woodlands. This hardy shrub can easily grow into messy thickets, and may disrupt the natural succession of native species. Relevant Government departments will trim and remove this plant in their regular vegetation management work on need basis to prevent impact on ecology or traffic.

- (c) ***Sonneratia species*** (originated in Southeast Asia, northern Australia and coastal areas of Indian Ocean, see Photo 3) – They grow very rapidly in mangrove forests and mudflats and may out-compete native mangroves for space for growth. AFCD regularly removes *Sonneratia* in mangroves and mudflats in the Inner Deep Bay to prevent any impact on this important habitat of migratory birds.
- (d) **Red Imported Fire Ant** (originated in South America, see Photo 4) – This ant causes harm to human health, ecological environment, public facilities, economy and agriculture. Government departments will remove red imported fire ant found in areas under their purviews, whereas owners and property managers are responsible for the management and ant control of private land under their purview. Members of the public may solicit AFCD’s assistance in identification of the ant and gain knowledge about the ant control through Government webpages.
- (e) **House crow** (originated in the Indian subcontinent, Yunnan in China, Myanmar and Thailand, etc., see Photo 5) – This bird causes nuisance to residential areas. There are also examples of impact on native birds in other countries. AFCD has been monitoring the number and distribution of house crow and carrying out nest removal as well as capture operations to control its numbers and minimise its impact on local ecology.

Enhancing Management of Invasive Alien Species

7. Under the Hong Kong Biodiversity Strategy and Action Plan 2016-2021, the Government will enhance management of IAS with a comprehensive strategy to prevent their adverse impact on local ecology. The comprehensive management strategy includes:

- (a) reviewing the situation of alien species in Hong Kong, collecting data and carrying out risk assessments to prioritise management efforts;
- (b) implementing prevention, early detection and rapid response measures for the target IAS identified;
- (c) controlling and managing target IAS with established population if practicable;
- (d) encouraging more local researches on IAS; and
- (e) enhancing public education.

The details are elaborated in the ensuing paragraphs.

Establishing a Risk Assessment Protocol to Identify High-risk Species

8. To manage alien species, conducting risk assessment is the typical step in the first place. This would help prevent the introduction of high-risk species, identify those that have already arrived, and facilitate the decision of whether eradication or other control measures should be taken. The Government is planning to establish a database on alien species to take stock of the current situation in Hong Kong. Meanwhile, with reference to protocols being adopted in other regions, a risk assessment protocol appropriate to the local context will be established to objectively assess the risk of alien species, including those already arrived and those that would potentially be introduced to Hong Kong. The Government will take into account the results of risk assessments and other considerations, such as cost-effectiveness of prevention and control measures and identification of IAS requiring priority treatment (i.e. target IAS), to implement appropriate management measures.

Prevention

9. For some target IAS that have not yet been introduced to Hong Kong, the Government can prevent their introduction through existing regulatory measures on the import of animals and plants for the purpose of pest control, quarantine and prevention of disease. As for whether there is a need to implement more import control on alien species as preventive measures for the introduction of IAS, the Government would need to handle this issue in a prudent manner. In the consideration of adopting the most appropriate arrangement, we have to assess the impact on the local ecology and the effectiveness of the existing control measures on one hand, and the potential impact of introducing other legislative regulations on the society, economy and international trade on the other hand.

Early Detection and Rapid Response

10. For target IAS that have not yet been introduced or established locally, apart from preventing their introduction, the Government will also consider establishing an “early detection and rapid response” mechanism, which includes long-term monitoring in high-risk locations and eradication of target IAS as soon as they are detected to prevent their establishment.

Control Measures

11. In general, control measures include removal of plant individuals, culling of target animals and application of baits and pesticides, etc. For target IAS that are already established in Hong Kong, appropriate control measures would be derived, taking into account the characteristics of the species, as well as its distribution and spread in the wild. These may include eradication or control measures to slow down their spread with a view to minimising their impact on local ecology.

Local Ecological Monitoring and Researches on Invasive Alien Species

12. AFCD is currently conducting regular biodiversity surveys in various parts of Hong Kong to record the distribution of species. This baseline information would facilitate the monitoring of the impact of alien species on local biodiversity. Meanwhile, the Government also encourages researches on IAS by universities and non-governmental organisations through funding support.

Publicity and Education

13. The Government will enhance publicity and public education on matters related to IAS to raise public awareness on the severity of the problem and nurture a proper attitude towards it. Noting that some members of the public have been releasing animals, including alien species (e.g. Red-eared Slider, Sabah Giant Grouper, etc.), into the wild, the Government has been collaborating with animal welfare organisations to produce videos and distribute posters to help the public understand the adverse impact of this act to both the released animals and the environment.

Advice Sought

14. Members are invited to note the Government's management measures on IAS and provide comments.

**Environment Bureau
Agriculture, Fisheries and Conservation Department
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Photos:

Photo 1: *Mikania micrantha*



Photo 2: *Leucaena leucocephala*



Photo 3: *Sonneratia* species



Photo 4: Red Imported Fire Ant



Photo 5: House crow

