

INTERNATIONAL APPROACHES TO TACKLE ISSUES OF ALIEN INVASIVE SPECIES AND BIODIVERSITY

N. Pallewatta

Regional Biodiversity Programme-Asia
IUCN - The World Conservation Union
Sri Lanka.

SUMMARY

The threats posed by alien invasive species have been recognized from a long time, and in-country measures such as quarantine regulations have been instituted to overcome these problems. However, alien invasive species is a cross-cutting issue that requires actions, which transcend national boundaries and sectors and formation of new alliances between governments, private sector, NGOs and the public. Most developing countries do not yet possess the scientific, institutional, legal and financial capacity to assess the seriousness of the problem and to begin addressing the issue within the country. This paper briefly examines the international approaches to tackle AIS and biodiversity, which are of relevance to Sri Lanka.

INTRODUCTION

Alien invasive species (AIS) are now recognized as a serious threat to conservation of native biodiversity, perhaps second only to habitat loss. Humans have been spreading AIS across bio-geographical barriers while they have been battling these species as pests and diseases of humans, plants and animals. However, recent attention drawn to these species is due to their significant negative impacts on native biological diversity and the increasing magnitude of this threat fuelled by the current processes of globalization and regionalization. These processes in turn are driven by the explosive growth of trade, travel and communications, all of which help AIS to spread their influence. It is clear that we are on the way to a new biotic order on earth due to massive breakdown of global bio-geographic barriers to migration (Anon 1999). The current extent of biological invasions makes it a form of global change such as climate change and invasive species as well. Just as in other forms of human induced environmental change, science, sociology,

economics, culture and politics are all ingredients in the theme of AIS and biodiversity.

The impacts of AIS are observed from all parts of the world and across all ecosystems but are considered most acute in islands in general and particularly for small island countries (Clout 1998; Glowka *et al* 1994). There is ample evidence of the havoc wreaked by introductions of animals and plants to small oceanic islands as well as to larger ones such as Australia and New Zealand, which have been highly isolated until the arrival of humans. Countries most vulnerable to harmful effects of biological invasions are island states, which are also developing countries. In addition, continental landmasses, freshwater ecosystems and coastal waters are identified as the areas where impacts of AIS are most likely to escalate in the future.

International Instruments and AIS

The convention on Biological Diversity (CBD), which has been ratified by 176 states, provides the most comprehensive framework for conserving the planet's biodiversity. It specifically addresses AIS through article 8(h) (Box 1).

Box 1

Article 8 - *In situ* Conservation

Each Contracting Party shall, as far as possible and as appropriate:

- (h) Prevent the introduction of, control or eradicate those alien species, which threaten ecosystems, habitats and species;

Other articles of the CBD, which are of relevance to this theme are Article 7 (Identification and Monitoring), Article 9 (*Ex-situ* Conservation), Article 10 (Sustainable Use), Article 12 (Research and Training), Article 13 (Public Education and Awareness), Article 14 (Impact Assessment and Minimizing adverse Impacts), Article 17 (Exchange of Information), and Article 18 (Technical and Scientific Co-operation).

A unique characteristic of the CBD is that it is expressed as overall goals and policies and not as specifically defined targets. Parties to the CBD are required to take action at the national level on the measures set out in the Convention, through preparation of National Biodiversity Strategies and Action Plans (NBSAPs). Thus, each party is allowed to have a “country driven” process that sets out the national framework for conserving its biodiversity (Glowka *et al* 1994). The Ministry of Forestry and Environment (MoFE) serves as the Sri Lankan focal point for the CBD and has accordingly prepared the document on “Biodiversity Conservation in Sri Lanka, A Framework for Action” (GoSL 1999), the official blueprint for protecting Sri Lanka's biological diversity.

The CBD provides the best opportunity for developing global and regional programmes and plans for prevention of entry and establishment and management of AIS. Further more, it enables developing countries to access financial mechanisms such as the Global Environment Facility (GEF) in efforts to conserve its biodiversity. It became evident that a set of principles should be provided to the Parties to the CBD to guide its future work on invasive species. Accordingly, in 1998, the Conference of Parties (CoP) requested the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) for such a set of guiding principles for the prevention of entry and introduction and mitigation of impacts of alien species. These draft guidelines are now being finalized, and will be presented at the next CoP in May 2000.

Many other global and regional instruments, some of which precede the CBD, make reference to non-indigenous species introductions (Glowka and de Klemm 1996). Some notable examples are, The UN Convention on Law of the Sea, The Convention on Conservation of Migratory Species (CMS), and Convention of Conservation of European Wildlife and their Natural Habitats (Bean 1996). The guidelines set out by the United Nations International Maritime Organization (IMO) for prevention of alien species through ship's ballast water (IMO 1993) is of special importance to Sri Lanka with its extensive and most economically important coastal zone. However, it is clear from the increasing numbers of alien invasive organisms and their rapidly spreading effects that actual measures being taken to address AIS are far from adequate.

Possible conflicts with other global treaties especially those which address trade (one of the key drivers of AIS spread around the planet) should be

examined. In this regard concerns have been raised on World Trade Organization's Sanitary and Phytosanitary Agreement (SPS) and the changes to the International Plant Protection Convention (IPPC), which are said to pay insufficient attention to the probability of increasing introduction of AIS (Campbell and Jontz 1997) through the "free trade". Modifications have been presented for consideration (Campbell 1997).

Global Invasive Species Programme (GISP)

In July 1996, a major international conference on Alien Species was held in Trondheim, Norway at which leading experts from around the world presented their findings and exchanged views on threats to biodiversity (Sandlund *et al.* 1996). The development of a global strategy for AIS was started at this landmark meeting, which later led to the emergence of the Global Invasive Species Program (GISP). This was initiated to link scientific research on AIS to their management, as a collaborative programme between the Scientific Committee on Problems of the Environment (SCOPE), IUCN - The World Conservation Union, Commonwealth Agricultural Bureau International (CABI) and the United Nations Environment Programme (UNEP). The GISP engages the many constituencies that are involved with the problem including natural and social scientists, educators, lawyers, resource managers, and people from both industry and government (Anon 1999). The first phase of GISP is expected to conclude in September 2000 and the current outputs include, the production of new tools, evaluation of best management practices and the formulation of a new strategy for addressing AIS (Anon 1999). A key product of GISP will be a toolkit for dealing with invasives for different parts of the world, presently in its final stages of development.

The work of GISP has received global attention, as indicated by the invitation made by the fourth meeting of the SBSTTA, to undertake a comprehensive review on the efficacy of existing measures, with a view to developing a global strategy on how to combat already existing problems with invasive species and to inform SBSTTA at its sixth meeting (Anon 1999). The second phase of GISP, which is being developed at present, is expected to commence in the latter period of 2000.

Contributions of the World Conservation Union (IUCN)

The IUCN recognized early on that the impacts of AIS on biodiversity could not be addressed without global action, and has been sponsoring and participating in, conferences and workshops and groups of experts towards this goal. The workshop on Alien Invasive Species as part of the First World Conservation Congress held in 1996 is one such example. This event was supported by Environment Canada, largely due to the Canadian experience with major invasions of alien species and their impact on endangered species and ecosystems (IUCN 1997) and examined some national as well as international issues. The IUCN currently continues to be active on several fronts including the GISP, the processes and events of the CBD, the work of its own Commissions, global and regional programmes, and country offices.

The IUCN Regional Biodiversity Programme - Asia, which is based in Sri Lanka and now active in fourteen countries in the region, has alien invasive species and biodiversity as one of its core themes. It has initiated the development of national level proposals on AIS and biodiversity and organized a two-day workshop on Alien Invasive Species as part of the South and Southeast Asian regional Session of the Global Biodiversity Forum, which will be held late October 1999, in Sri Lanka. This workshop includes presentations by experts from nine countries in Asia, New Zealand and the Pacific. It is expected to produce a set of recommendations for taking action on non-indigenous species and their impacts on biodiversity in Asia.

Global Initiative on Alien Invasive Species

The IUCN launched a Global Initiative (GI) on AIS in 1998, as a contribution to GISP, with the aim of preventing the loss of biodiversity due to alien invasive species, improving detection and prevention techniques, and control and eradication methods (Anon 1998). It had four objectives *i.e.* development of a knowledge base, provide sufficient capacity to address AIS problems, and awareness building among stakeholders. Several countries were identified as high priority areas suitable as pilot sites for test approaches under the GI, resulting in the development of three country level proposals in Pakistan, Sri Lanka and Vietnam in 1999. Preparation of the country level proposals involved consultation with stakeholders drawn from various sectors, and the examination of various programmes, plans and actions that

existed on agricultural, livestock and health related AIS programme or project. However, to prevent misinterpretations of the concept of AIS by non-specialist audiences, there is a need to draw special attention at country level to the impacts of AIS on native biodiversity, and the importance of forging national and international partnerships between technical, administrative, and enforcement agencies.

This process has also shown that relatively new issue of the harmful effects of AIS on native biodiversity makes it more difficult at present to gain the attention of governments, and multi-lateral and bi-lateral funding agencies to support this theme. However, attention paid by the CBD, and other global treaties and programmes is enabling this theme to slowly gain ground and should lead to further action.

IUCN/Species Survival Commission (SSC), Invasive Species Specialist Group (ISSG)

Created in 1993, the ISSG now has over 80 expert members from around the world and has become an authoritative source of information and products ranging from policy analyses to guideline for prevention of biodiversity loss due to biological invasions (IUCN 1998). Membership is by invitation but the ISSG is seeking to expand its membership and develop sub-groups on specific topics. Developing countries stand to gain much by accessing this global pool of technical knowledge as well as its products.

Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species, prepared by the above group and at present in a draft version, are expected to be formally approved by the IUCN Council in 2000. These guidelines are an improvement if the existing IUCN position statement on Translocation of Living Organisms (IUCN 1987), and are also connected with IUCN Guidelines for Re-introductions (IUCN 1995). They are intended to assist governments and management agencies to implement Article 8(h) of the CBD (see Box 1). They do not address genetically modified organisms, even though many of the issues and principles could apply (IUCN 1999). The problems encountered by vagueness of terms on this topic are addressed in the document by setting out terms developed by the IUCN in the context of native biodiversity loss caused by AIS (IUCN 1999).

The guidelines take into account four substantive areas of problems of biological invasions *i.e.* improving understanding and awareness, strengthening the management response, providing legal and institutional mechanisms, and enhancing knowledge and research efforts. The detailed guidelines and recommended actions that range from national to international provide a useful framework, which can be adapted to suit developing country conditions and issues.

RECOMMENDATIONS

It is very much hoped that this workshop organized by the MoFE, being the first ever gathering of specialists on the theme of AIS and biodiversity in Sri Lanka, will be the catalyst for a future country-wide programmes involving government, NGO, local community and the private sector to prevent and reduce the negative impacts of non-indigenous species. A few recommendations, which the author considers should be among the first steps to be included within a holistic approach to AIS issues of Sri Lanka are given below.

- A national multi-sectoral body on alien invasive species, which will provide leadership, and coordinate a cross-cutting programme to prevent and manage biological invasions, should be formed. The main activity of this body should be to co-ordinate the process of initial development and periodic revision of a National Invasive Species Action Plan and Programme and its implementation.
- The national programmes on AIS should;
 - (i) ensure the integration of regional and global approaches;
 - (ii) incorporate AIS issues more firmly into the National Biodiversity Action Plan;
 - (iii) apply the preventive and precautionary approach to all AIS introductions;
 - (iv) make EIA and risk assessment a requirement in evaluations for proposed introductions of non-indigenous species;
 - (v) establish early warning and rapid response systems;
 - (vi) cooperate and build alliances with private sector or other organizations contributing to increase of AIS as well as with those suffering from the effects of AIS to reverse the trend.

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