



Turning off the Tap: Addressing International Invasive Alien Species Issues

SUSTAINABLE DEVELOPMENT DEPENDS ON BIODIVERSITY

Our ability to develop sustainably depends on biodiversity: the variety and variability of genes, species, populations and ecosystems to support our planet's essential goods and services. Biodiversity provides resources, such as food, fiber, and fuel, ecosystem services, such as renewal of soil fertility and purification of water, and spiritual and aesthetic benefits on which human societies depend.

INVASIVE ALIEN SPECIES IMPACTS TO BIODIVERSITY

Unfortunately, invasions by plants, animals, and pathogens into non-native environments pose one of the most significant, but least addressed, international threats to biodiversity.¹ Infamous examples of this impact include the introduction of chestnut blight and Dutch elm disease into North America, which reshaped forests throughout the Eastern United States; and the introduction to Guam of the brown tree snake, which extirpated most of Guam's native terrestrial vertebrates, including fruit bats, lizards, and virtually all of the island's forest birds. No inhabited region has escaped invasion. Eurasian zebra mussels clog the Great Lakes. Tropical seaweeds carpet the Mediterranean Sea. European rabbits plague Australia. South American water hyacinths choke African rivers. North American pines crowd out native forests in South America. And the rate of new invasions continues to accelerate.

These biological invasions are reversing the usual evolutionary pattern of species divergence, creating a trend from biodiversity toward biosimilarity. Such trends may have serious ethical and cultural costs, including threats to local and traditional

economies and the reduction or loss of traditional knowledge, customs, and practices associated with the species under threat.²

Invasive alien species also profoundly impact human health. The spread of invasive pathogens, such as the West Nile Virus, poses serious threats to humans and wildlife in a growing number of nations. Additionally, invasive alien species threaten food crops and critical water resources in many regions, particularly in developing countries. The recent outbreak of foot-and-mouth disease in Europe has resulted in the mass slaughter of pigs and cattle throughout England and a ban on livestock exports. Philippine rice farmers have lost nearly US\$1 billion in crops to the invasive golden apple snail. In South Africa, alien waterweeds are diminishing much-needed water supplies.³

WHILE IMPACTS OF INVASIVE ALIEN SPECIES ARE PRIMARILY LOCAL AND NATIONAL, THE ROOT CAUSES ARE INTERNATIONAL -- DRIVEN BY GLOBAL TRADE, TRANSPORT AND TOURISM

Management, eradication, and remediation activities associated with these impacts impose enormous costs on national economies. Economic costs for the U.S. alone are estimated to be US\$137 billion annually.⁴ Although comprehensive studies of the global economic impact of invasions are lacking, studies on the high cost per species for those invasions suggest invasive alien species cost the world billions of dollars every year.⁵

RESPONDING TO THE CHALLENGE

Developing a system to confront these risks and reduce associated costs is one of the most significant environmental chal-

lenges now facing the international community. While impacts of invasive alien species are primarily local and national, the root causes are international - invasive alien species introductions are driven by global trade, transport and tourism.

Responding to this challenge requires addressing five key international issues:

- (1) developing measures to prevent the introduction of invasive alien species;
- (2) building capacities to implement measures;
- (3) addressing responsibility and establishing accountability among private actors;
- (4) addressing international liability and providing redress for harms caused by invasive alien species; and
- (5) facilitating cooperation and coordination among States.

Measures to prevent introductions should recognize distinctions in the availability of information and capacity for control. When information about risks posed by invasive alien species is limited, the most effective measure is one that provides those whose activities facilitate movement of invasive alien species, also known as "pathway actors", with clear blueprints to reduce risks posed by their activities. For example, persons/entities involved in trading plants, which are a significant source of invasive species impacts, could benefit significantly from information describing approaches to reducing risks posed by their activities. To capitalize on this information, the measure should also motivate the pathway actor to implement the blueprints. Imposing user fees that are commensurate to risk on each major pathway is one approach to motivating behavior in this context. If information suggests that risks posed by an introduction are significant, stricter control measures should be applied.

To build capacity, a portion of the user fees should be allocated to an international fund, which developing countries could access to implement plans to tackle invasive alien species issues. To enhance State responsibility and accountability, a portion of the user fees should be used to establish a no-fault insurance fund from which States injured by invasive alien species could recover without establishing fault. When the source of a significant harm is clear, redress through traditional liability measures may be appropriate. To facilitate cooperation and coordination, a mechanism should be developed to network existing institutions.

OPPORTUNITY PROVIDED IN RIO FOR THE 2002 JOHANNESBURG SUMMIT

By adopting the Convention on Biological Diversity (CBD) at the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, the international community laid the groundwork for addressing biodiversity issues, including the problem of invasive species. During the past ten years, Parties to the CBD have focused primarily on developing plans, policies and guidelines for action on these issues. The 2002 World Summit on Sustainable Development should serve as an occasion to move coun-

tries toward implementation of these ideas. By obtaining a commitment from countries to move toward action, the World Summit could help ensure that opportunities provided in Rio over ten years ago are finally realized.⁶

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1. Osvaldo E. Sala et al., "Global Biodiversity Scenarios for the Year 2100", 287, *Science* (2000), 1770. Scientists pinpoint the impact of invasive alien species on terrestrial and aquatic systems as second only to habitat destruction in harm to biodiversity.

2. C. Shine et al., "A Guide to Designing Legal and Institutional Frameworks on Alien Invasive Species," IUCN-ELC Environmental Policy and Law Paper No. 40 (IUCN, 2000), at 9.

3. Global Invasive Species Program, *A Practical, Comprehensive Strategy*, (May 2001) Available at the GISP website: <<http://jasper.stanford.edu/gisp/lnit.htm>>.

4. D. Pimentel et al., *The Economics of Biological Invasions* (Elgar, 2000).

5. For example, the annual cost of fighting rabbits in Australia has been estimated at \$US373 million each year. Australia loses a further US\$105 million each year trying to control six types of invasive weeds in agroecosystems. The cost of controlling water hyacinth in seven African countries amounts to US\$71.4 million each year. The economic impact of knapweed and leafy spurge in three US states is US\$40.5 million each year in direct costs, plus an additional US\$89 million in indirect costs. The damage to US and European industrial plants from zebra mussel and other aquatic invasives between 1988 and 2000 is estimated at US\$3.1-5.0 billion. See CBD Secretariat, *Governments seek strategies for battling invasive alien species*, Convention on Biological Diversity (CBD) Secretariat, March 9, 2001 - www.biodiv.org.

6. Such a commitment, for example, would increase the likelihood of significant action by Parties to the CBD as they implement their recent decision (COP 6, April 2002) to "identify and explore gaps" in the international regulatory framework for addressing invasive species issues.