



INVASIVE ALIEN SPECIES AND TRADE

Integrating Prevention Measures and International Trade Rules

The advent of humanity's movement across continents and more recently the globalization of trade and transport have intentionally and unintentionally spread species of all taxa throughout the world, often with devastating impacts on their new host environments. The introduction of the brown tree snake on Guam extirpated a range of native birds, lizards and bats. Yellow crazy ants have decimated red land crabs on Christmas Island with ripple effects on forest structure and habitat for endemic birds. In Lake Victoria, explosive growth of water hyacinth blocked waterways and led to the proliferation of parasites that attack the human liver, lungs and eyes. Meanwhile, deliberate introduction of Nile perch as a food source annihilated local fish species. Ocean-going vessels are renowned for moving injurious aquatic species in their ballast, transporting over 10,000 species every day with a long list of harmful introductions including the zebra mussel in the U.S. Great Lakes, comb jellyfish in the Black Sea, the northern Pacific seastar in Australia, and a cholera outbreak in Peru. Such examples do not even include threats to agriculture or the wide range of impacts on economic and social development. There have been notable successes in controlling the spread and mitigating the impacts of invasions in Lake Victoria, Australia, South Africa and elsewhere. Yet international trade continues to move species around the world, leaving countries increasingly vulnerable to new introductions.

Invasive alien species (or "invasives") are plants, animals and pathogens introduced outside of their natural range and whose establishment and spread can adversely impact other species, habitats and ecosystems. The problem of invasives is closely linked to global trade as the movement of goods and services across boundaries and regions provides pathways for their spread. Sometimes species are introduced intentionally, as in the examples above. Unintentional introductions occur when a species "hitchhikes" to a new place. Common pathways for unintentional introductions include ship's ballast water containing exotic aquatic organisms, timber harboring insects, livestock infected with diseases and tourists' boots with seeds on the bottoms. As global trade increases, the number of unintentional introductions increases for a variety of reasons:

- increased trade leads to more chances for introduction of invasives;
- more introductions lead to a greater probability that an invasive species will become established;
- a greater variety of goods and means of transport increases the potential array of species and their pathways;
- more frequent trade to a wider range of countries increases the rate and variety of potential introductions; and
- faster modes of transport may improve an organism's chance of survival while in transit.

The movement of invasives through global trade has significant negative economic, social and environmental impacts. Among the economic impacts are reduced crop yields, fouled ship hulls and intake valves, and costly removal through mechanical harvesting or harmful chemicals and pesticides. Socially, invasives threaten human health through the spread of disease, compromise the aesthetic and spiritual values of natural wonders and sacred spaces, and jeopardize food security and native plants used for medicinal or hygienic purposes. Ecologically, invasives are one of the top two threats to the survival of endangered species. Furthermore, impacts on ecosystem processes such as pollination patterns, fire regimes and hydrological cycles can have profound ecological and economic consequences. These localized negative impacts reduce the benefits of global trade to societies and highlight the need for invasive species prevention measures.



Rather than objecting to trade per se, this paper supports decoupling increases in the volume of global trade from the introduction of invasives. The key is safe, clean trade – trade within a framework of laws and practices by which the importers and exporters recognize the movement of invasives and adopt effective measures to prevent their introduction.

AVAILABLE TOOLS: INVASIVES & PREVENTION MEASURES

Once an invasive species is introduced into a new ecosystem, subsequent efforts for eradication, containment or control are increasingly less successful and more expensive. Even wealthy countries such as the United States have faced extensive difficulties in dealing with established invasives, which suggests that developing countries are even more hampered. Experts generally agree that preventing unwanted introductions is the most effective way to mitigate the threat of invasives. Many countries utilize a spectrum of prevention measures that govern how imported goods are treated, including:

- Pre-border measures reduce the likelihood that invasives will ever reach new countries or ecosystems. Examples include: requiring ships to discharge ballast water away from the coast prior to port entry; fumigation, quarantine or other processing requirements carried out in the exporting country; and consultation of national (black, white and grey) lists of species that can or cannot be imported.¹
- Border measures intercept potential invasives at a political boundary when pre-border measures are not in place or are not fully effective. Customs rules, inspections and quarantine procedures are widespread, longstanding types of border measures addressing invasives species risks. Some countries also employ stricter measures such as extensive applications and environmental impact assessments.
- Post-entry measures: Once a potentially invasive species is allowed past the border, a country may be able to contain it through tools such as monitoring for high risk invasives around major ports or other centers of domestic trade (e.g., nurseries).

THE FRAMEWORK: INVASIVES & WTO LAW

Global trade is generally conducted within the purview of the World Trade Organization (WTO). Any regulatory or other schemes that WTO member countries devise to protect their economies and ecosystems from introductions of invasives must be consistent with the WTO's constituent agreements. The most relevant for prevention measures are the General Agreement on Tariffs and Trade (GATT) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).

Before looking at these agreements, it is useful to note an overarching principle of law that countries can choose to reference in designing their invasive species prevention systems - the precautionary principle. While formulations vary, at its core the principle holds that lack of scientific certainty is not a reason to postpone measures to prevent environmental degradation if serious or irreversible damage is threatened. Clearly, invasives pose a serious (and practically irreversible) problem. Although controversy surrounds the precautionary principle in the broader trade and environment debate, for invasives it is relatively straightforward: if countries choose to, they may utilize the precautionary principle in crafting and, if necessary, defending their prevention measures.

General Agreement on Tariffs and Trade (1994) – The GATT seeks to limit tariff and non-tariff barriers to trade. Its two main requirements are that (1) products be treated no less favorably under national laws of the importing country than like domestic products (the “national treatment” obligation), and (2) products from one country be treated no less favorably than products from any other country (the “most favored nation” obligation).

These requirements, however, do not bar legitimate invasive species prevention measures. Article XX of the GATT provides an exception to GATT rules for measures “necessary to protect human,

animal or plant life or health” or “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.” Furthermore, the WTO’s Appellate Body has developed jurisprudence that preserves room for adopting prevention measures that distinguish between otherwise similar goods on the basis of invasive species risks.²

Agreement on the Application of Sanitary and Phytosanitary Measures – The SPS Agreement is the WTO instrument most applicable to regulating invasives. It defines the basic rights and obligations of WTO members regarding use of domestic measures to protect animal or plant life or health from risks arising from the entry, establishment or spread of pests, where such measures may directly or indirectly affect international trade.

Members who want to implement prevention measures can do so under the SPS Agreement, but there are a number of key issues that must be recognized:

- **Harmonization and international standards:** The SPS Agreement encourages broad harmonization of SPS measures among WTO members. If a prevention measure conforms to an agreed-upon international standard,³ the measure enjoys a rebuttable presumption that it is consistent with the SPS Agreement and the GATT.
- **Stricter national measures:** Members may enact prevention measures that are stricter than international standards, but the measure will not automatically be presumed consistent and must meet a range of criteria, including:
 - **Transparency:** This applies to both procedural requirements (e.g., providing text of adopted measures to other countries, responding to requests for information) as well as substantive requirements (e.g., providing scientific justification for measures, conducting risk assessments).
 - **Equivalence:** An exporting country may demonstrate that its alternative measure can just as effectively meet the importing country’s desired level of protection. The importing country must accept such an “equivalent” regulation, but the burden is on the exporting country to demonstrate that its measure is comparatively protective.
 - **Consistency:** Members must be consistent in addressing risks; if a prevention measure requires a particular treatment for one invasive species, the country must similarly treat other pathways by which that same species could enter.
 - **Least trade restrictive:** While each Member is free to determine their own level of protection, the means chosen to achieve that protection must not needlessly restrict international trade.



- **Basis in scientific evidence:** The SPS Agreement requires that SPS measures that might affect trade be “based on scientific principles,” and “not maintained without sufficient scientific evidence.” How much evidence is “sufficient”? This is a difficult question since there will always be some uncertainty when dealing with potential invasive species risks. Based on WTO Appellate Body decisions, a general test is whether the data are adequate to support a rational relationship between the proposed SPS measure and the risk assessment.
- **Risk assessment:** A risk assessment encompasses the process of gathering and reviewing information regarding the potential threat of an alien species. It must identify the risk and evaluate the likelihood of the entry, establishment and spread of the species with and without the proposed prevention measure. This is a complicated process, particularly given the inherent limitations of risk assessments and their ability to predict the invasiveness of an organism. Thus, the precautionary principle is an essential aspect of designing an effective prevention measure.
- **Provisional measures:** One method of contending with scientific uncertainty in addressing a potential invasive species is to adopt prevention measures on a provisional basis. The SPS Agreement allows Members to adopt provisional measures when there is insufficient scientific evidence to determine the risk of an imported alien species. Herein, the SPS Agreement incorporates precaution by acknowledging that in the face of scientific uncertainty it is reasonable for regulators to make conservative assumptions regarding the degree of danger presented, and on that basis to take action to counter the threat.

Even for countries with relatively ample resources, addressing the threat of invasives is a significant challenge. For many developing countries, managing invasive species presents an additional demand on an already limited pool of resources. Recognizing this, the SPS Agreement calls for technical assistance and “special and differential treatment” for developing countries. In practice, special treatment has resulted in time-limited derogations from SPS regulations and limited policy flexibility, and the technical assistance has been largely in the form of workshops and training modules. These have proven insufficient, however, to help developing countries build the technical, regulatory and institutional capacity to meet other countries’ SPS standards or to effectively protect themselves from unwanted introductions.

The WTO’s Doha “development” round of negotiations recognizes the problems faced by developing countries in reaping the expected benefits of trade liberalization. Ultimately, strengthening the ability of developing countries to prevent introductions of invasive species benefits both the global community and international trade through improved safety and security.

THE WAY FORWARD: PRINCIPLES & RECOMMENDATIONS

Governments, businesses and communities are starting to identify the severe economic, social and environmental costs of invasives. Some countries are recognizing that the price of prevention measures pales in comparison to the toll of invasives on society. But this does not necessarily mean that all such countries are able to assume the costs to implement a system of prevention. And even if one country enacts a preventive scheme, it will not be successful if its neighboring countries are lax and allow invasives to gain a foothold in the region. Thus, the following principles and recommendations are offered to guide the international community and individual governments as they design effective prevention systems:

- **Prevention measures should be designed to be consistent with the legitimate objectives of the SPS Agreement and other relevant WTO agreements.**
- **Prevention measures should take a conservative, precautionary and cumulative approach tailored to the risk at hand.**
- **Assessments of risk should seek to link species and pathways, to facilitate an efficient, comprehensive approach to invasive species prevention.**
- **Systems of prevention should require appropriate assignment of costs and analytical burdens, particularly where developing countries are involved.**
- **Countries enacting prevention measures in a non-discriminatory fashion will not violate WTO law by setting high levels of protection.**
- **Prevention efforts should also be international or regional in scope, building on and reinforcing legislative and regulatory systems at the national level.**

The more countries that choose to address the invasives problem and the more governments cooperate within regions and across borders, the better chance we will have to safeguard our industries, ecosystems and cultures from the high costs of invasive alien species.

¹ There are three main types of species lists. *Black lists* ("dirty" lists), the most commonly used, identify species whose introduction is prohibited or restricted because of their potential adverse effects on the environment or human, animal or plant health. The efficacy of black lists depends on their scope and the country's ability to add and amend them in a timely fashion. *White lists* ("clean" lists) identify species that are low-risk and approved for introduction based on the results of a risk assessment. Less common than black lists, they can be used on their own (in which case species not on the list are denied entrance) or in tandem with a black list. *Grey lists* ("pied" lists) include species whose risk cannot be determined conclusively. A gray list functions as a provisional black list; species on the list are temporarily prevented from import until the appropriate agency has determined whether it is safe or potentially invasive. Only a handful of countries use grey lists, but they can be one of the most effective mechanisms to deal with uncertainties around intentional introductions of alien species.

² See generally, N. BERNASCONI, D. MAGRAW, J. OLIVA, M. ORELLANA, E. TUERK, ENVIRONMENT AND TRADE: A GUIDE TO WTO JURISPRUDENCE, (EARTHSCAN 2005); See also, European Communities - Measures Affecting Asbestos and Asbestos-Containing Products (EC-Asbestos), WT/DS135/AB/R at ¶ 113 (adopted Apr. 5, 2001). Such jurisprudence is also discussed extensively in the larger report on which this briefing paper is based.

³ The SPS Agreement recognizes international standards developed under the International Plant Protection Convention, which sets standards for plant health; the Office International des Epizooties, which sets standards for animal health and animal diseases that impact human health; and the Codex Alimentarius Commission, which sets food safety standards.

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For more information please contact:

- Stas Burgiel, The Nature Conservancy (sburgiel@tnc.org; <http://nature.org/invasivespecies>)
- Marcos Orellana or Anne Perrault, Center for International Environmental Law (morellana@ciel.org; aperrault@ciel.org; <http://www.ciel.org>)
- Defenders of Wildlife (invasives@defenders.org; <http://www.defenders.org>)



The Center for International
Environmental Law

