Small Island Developing States and Invasive Alien Species: BUILDING CAPACITY

Discussion Draft

THE SILENT INVASION

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Many small island developing states (SIDS) acknowledge the significant challenges posed by invasive alien species (IAS) but lack the capacity to address these threats. SIDS face a myriad of other pressing concerns, such as economic development, public health, sea level rise and extreme weather events to which IAS presents an additional demand on an already limited pool of resources.

Many small island developing states acknowledge the significant challenges posed by invasive alien species, but lack the capacity to address these threats.

Major goals of capacity building to address IAS include providing SIDS with the institutions, expertise and tools to assess and predict both the risks and sources of invasions, and to act in response to these threats. SIDS can enhance their human, scientific, technological, organizational, and institutional capacities to achieve these goals by availing themselves of supportive legal structures, additional financial resources, increased regional coordination and technology exchange, and existing scientific information and technology.

The sections below highlight these key areas for capacity building, and provide an indicative list of resources for these topics.

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SETTING A LEGAL FRAMEWORK AND SECURING ADDITIONAL FINANCIAL RESOURCES

Effective national legislation and regulations combined with sufficient financial capacity may be the primary factors limiting the abilities of SIDS to address fully invasive species concerns. The core of a country's capacity to combat IAS is a comprehensive legislative framework combined with a regulatory structure that enables authorities to prevent as many introductions as possible, while also allowing for rapid-response actions to eradicate or control established species. Such legislation should: be multi-disciplinary addressing trade, transport, agriculture, tourism, health, the environment and other relevant sectors; incorporate all ecosystems and biomes, as well as relevant vectors and pathways; and provide means for interagency dialogue and stakeholder involvement.

A number of international environmental, trade and transport institutions and agreements provide guidance on how countries can frame their regulatory responses to IAS. The Convention on Biological Diversity (CBD) encourages states to develop an IAS strategy, which can be used to assess gaps and integrate IAS concerns into economic, sustainable development and biodiversity strategies. In the context of the World Trade Organization, countries can review and strengthen their sanitary and phytosanitary regulations to address agricultural as well as environmental and public health issues, including their approaches to intentional introductions; quarantine procedures; risk assessments; particular pathways (e.g., shipping containers, solid wood packaging material, ballast water exchange); and precautionary measures.

Experience shows that prevention of IAS is significantly more cost-efficient than engaging in eradication or control efforts after their introduction. Thus, effective prevention efforts can serve as one way to reduce and re-focus existing expenditures used to combat IAS wherever they may appear. A number of sources of external funding exist for these efforts, as well as for many of the areas outlined in subsequent sections. The Global Environment Facility and the Standards and Trade Development Facility are two primary international vehicles in addition to bilateral development assistance focusing on island states from countries like Australia, New Zealand and the U.S.

Some countries are also considering adopting a polluter-pays approach to building their financial capacity to address invasives issues, including, for example, "user fees" imposed on major pathways of invasives.

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Resources

Global Environment Facility (GEF): The GEF, which is the interim financial instrument for the CBD, has already funded a number of activities regarding national and regional policies on IAS (Pacific Invasive Species Management Project), specific pathways (Global Ballast Water Management Programme) and ecosystems (Galapagos, Côte d'Ivoire, Pantanal and Upper Paraguay River Basin). The GEF has also initiated capacity building efforts for the implementation of the Cartagena Protocol on Biosafety, which incorporate a number of regulatory and institutional mechanisms that can also be adapted to IAS management. [http://www.gefweb.org]

Standards and Trade Development Facility (STDF): The STDF was established by the World Bank, WTO and several other international institutions to: provide small grants for pilot projects that build capacity in standards in developing countries (e.g., for sanitary and phytosanitary regulations); assist governments and the private sector in meeting international standards; and strengthen interagency coordination and donor collaboration in related technical assistance. [http://www.standardsfacility.org]

Global Invasive Species Programme (GISP): Established in 1997 through a collaborative effort of IUCN, the Scientific Committee on Problems of the Environment (SCOPE) and the Center for Agriculture and Biosciences International (CABI) to address global threats caused by IAS and to support related work under the CBD. During its first phase, GISP conducted reviews of the existing knowledge base on IAS, investigated new approaches to deal with IAS, published *A Toolkit of Best Prevention and Management Practices and a Global Strategy on IAS*, and established the Global Invasive Species Database. Pending adequate resources, GISP's second phase will focus on improving national and regional capacity through the development and promotion of training programs, taxonomic work, regional IAS centers and new scientific, policy, information and educational tools. [http://www.gisp.org]

New Zealand's Import Health Standards: As legislated within its 1993 Biosecurity Act, the New Zealand government requires a broad range of information for specific categories of imports, such as animal and plant products, forest products, containers, vehicles and machinery. Information required by an import health standard includes: documentation requirements; list of organisms associated with a crop or particular import; pre-export activities; inspection required by the exporting country; transit, entry and post-entry requirements; and any declarations for phytosanitary certification. These standards could be a useful model for the development and elaboration of other countries' national systems. [http://www.protectnz.org.nz]

INCREASING REGIONAL COORDINATION AND INFORMATION EXCHANGE

Increasing regional coordination and information exchange would improve SIDS' capacity by: (1) helping to ensure that all SIDS in a region are addressing invasive species issues and that the efforts of one country are not undermined by the inaction of another; (2) providing, for each state, additional region-specific information about threats, impacts and options for addressing invasive species issues; and (3) enabling the region to reduce risks posed by pathways for the introduction of IAS.

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Broader discussions among SIDS and, perhaps, development of regional strategies, would highlight the need for all states to address the IAS concerns and could motivate action to establish or adopt coordinated sanitary and phytosanitary regulations. Additionally, given the biological and physical similarities among islands states, SIDS are in a good position to share information about how to approach these measures, including import health standards and risk assessments. Effective communication with other island states in a region can identify known and potential IAS, and thereby help prioritize further work on assessments and prevention plans. Regional centers of excellence can support this work, and island states can share methodologies and experiences on the management of IAS. Finally, regionally coordinated action is essential for supporting each individual country's pre-border measures to reduce the risks posed by major IAS pathways.

A number of information technologies exist that can assist island states, including a range of databases and other information systems. Many of these tools rely on the internet and developed telecommunications systems, whose reliability is often a factor in developing island states. Therefore, such electronic resources must be supplemented by updatable, user-friendly and accessible CD-ROMs, hard copies or other materials.

Such information must also be communicated effectively to the public, other agencies and visitors. Significant effort is needed in the area of public awareness to engender support and cooperation in early detection and prevention efforts. These public and visitor education campaigns need to be able to present information in an appropriate language and tone, while also conveying the larger rationale for preventing IAS introductions. The Secretariat of the Pacific Community has been especially active in supporting awareness campaigns around regional events, such as the South Pacific Games in Fiji in 2003 and for the upcoming Festival of Pacific Arts in Palau in 2004.

Resources

Cooperative Initiative on IAS on Islands: Developed by IUCN's Invasive Species Specialist Group (ISSG) and the government of New Zealand under the umbrella of the Global Invasive Species Programme (GISP), the Cooperative Initiative is designed to facilitate cooperation in the management of IAS for island ecosystems. Particular areas of focus include: eradication efforts; management of IAS populations in cases where eradication is not possible; training and other capacity building efforts; and undertaking quarantine and contingency response activities to prevent the establishment of new IAS populations. [http://www.issg.org/islandIAS.html]

Regionally coordinated action is essential for supporting each individual country's pre-border measures to reduce the risks posed by major invasive alien species pathways.

Aliens Newsletter and List-server: Coordinated by the ISSG, the Aliens Newsletter and Aliens-L internet list-server provide timely information on IAS issues. The Newsletter focuses primarily on the conservation dimension of IAS, rather than economic, health or agricultural aspects. [Back issues and subscription information: http://www.issg.org/newsletter.html#Listserver] The Aliens-L list-server is an open discussion group that allows subscribers to post articles, ask for advice and debate practical, scientific and ethical topics regarding the management of IAS. [Subscribe by e-mailing listadmin@indaba.iucn.org with "subscribe Aliens-L" in the body of the message]

SPREP Regional Invasive Species Programme (RISP): In 1998 the South Pacific Regional Environment Programme (SPREP) developed the RISP to prevent, eradicate or control non-indigenous species threatening ecosystems, habitats and species within the region. Following a technical review a regional strategy was developed, which has provided the impetus for a range of projects addressing invasive birds, plants, vertebrates and non-vertebrates, as well as particular country activities in American Samoa, Kiribati, Niue, Samoa and Vanuatu. [http://www.sprep.org.ws/topic/Invasive.htm]

Pacific Invasives Learning Network: The Cooperative Initiative, SPREP and the Nature Conservancy (TNC) are currently developing a Pacific Invasives Learning Network to empower more effective IAS management by linking conservation area and habitat managers with a participant driven system that can respond to local needs, facilitate information exchange and provide links to technical expertise. Preliminary objectives include: fostering development of innovative and adaptive approaches to IAS; supporting IAS management activities; overcoming professional and geographical isolation; sharing learning approaches and peer review of others' work; and informing sponsors, donors and others about the specific needs of Pacific island conservation practitioners. [Contact Mark White, mwhite@tnc.org] See also the Pacific Island Ecosystems at Risk project [http://www.hear.org/pier] and the Pacific Basin Information Node of the U.S. National Biological Information Infrastructure [http://pbin.nbii.gov]

Secretariat of the Pacific Community-Plant Protection Service (SPC-PPS): The SPC-PPS has worked in partnership with 22 Pacific island states and territories to develop and maintain effective quarantine systems to limit the introduction of plant pests, diseases and weeds, and to assist in eradication and containment measures upon an introduction. Particular pest management activities have focused on fruit flies, taro beetles and the provision of extension services to a number of small island states. The work of the SPC-PPS is also coordinated with the Pacific Plant Protection Organization, the regional body of the International Plant Protection Organization. [http://www.spc.org.nc/pps/]

USING EXISTING SCIENCE AND TECHNOLOGY

Information and technology are critically important for assessing and predicting risks as well as for developing and implementing response measures. Basic research capacity and scientific knowledge of a country's biological resources is essential to set an ecological baseline, which pinpoints vulnerable ecosystems and threatened species, identifies established and potential IAS, and supports further work in taxonomy and systematics. This baseline data then becomes

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important in being able to identify and monitor IAS, their impacts and spread, as well as how human activities and natural phenomena further influence invasions.

National and/or regional capacity for risk assessment is essential for establishing effective national regulations, developing risk management and mitigation strategies, and prioritizing national and regional response activities. Such work can also be supported by predictive methodologies to gauge potential invasions, as well as identification and taxonomic tools to supplement monitoring efforts.

Resources

Global Invasive Species Database (GISD): Developed by the ISSG and GISP, the GISD provides information on IAS to government agencies, resource managers and interested stakeholders. The database covers all taxonomic groups, including micro-organisms, plants and animals, and accessible information covers a species' biology, ecology, range, as well as references, web links, images and contacts. Other related tools under consideration are a global information network and early warning system. [http://issg.appfa.auckland.ac.nz/database/welcome/]

IABIN Invasive Information Network (I3N): Developed under the Inter-American Biodiversity Information Network, I3N is designed to make country data on IAS available in an online searchable database for use by government agencies, scientists and land managers. Building on a pilot project from 2002 involving 13 countries, including some Caribbean island states, I3N is currently developing: a North American Invasive Species Information Hub; tools to search museum species collections and records; and methodologies for plotting species distribution and predicting potential invasion sites. [http://www.iabin-us.org/projects/i3n/i3n_project.html]

Global Invasive Species Information System (GISIN): Efforts are currently underway through the U.S. Geological Survey and the National Biological Information Infrastructure to develop the technical framework to interconnect existing IAS databases (e.g., GISD, I3N) thereby allowing for comprehensive global data searches on actual and potential IAS. Planning activities, including meetings and electronic dialogue, are now underway. [http://gisin.infointl.com/]

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Australian Weed Risk Assessment (WRA): In the late 1990s, the Australian government developed a WRA methodology using technical criteria to evaluate the potential invasiveness of a plant species. Based on a scoring system incorporating 49 questions on weed history, biogeography and ecology, the WRA methodology has evolved to allow for a ranking of species according to their invasiveness, impacts and potential distribution. The tool serves as a valuable resource for making quarantine decisions and developing risk assessments and risk management strategies. Experts are currently considering how the WRA can be replicated for use in other countries with their own particular ecosystems and environmental conditions. [http://www.affa.gov.au/content/output.cfm?ObjectID=6AC8861C-AC6A-446D-A4BA1730A9B01ADC]

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Pestnet: Pestnet is a web and e-mail based network that assists governments, NGOs, universities, the private sector and farmers in the Pacific and South East Asia to obtain rapid advice on plant protection issues. The free service provides links to plant protection specialists worldwide and covers issues including identification from digital images, pest outbreak alerts, pest management techniques and quarantine interceptions. [http://www.pestnet.org]

Pacific Islands Distance Diagnostics and Recommendation System: Building on diagnostics and imaging techniques developed by the U.S. Department of Agriculture and the University of Georgia, this system is used to submit textual descriptions and images of agricultural problems, including plant pests and other IAS, to agricultural experts for rapid assessment. The system is currently under development and expansion and is available to Pacific islands that are affiliated with the U.S. [http://www.dddi.org/pacific]

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