

GISP

The Global Invasive Species Programme



Tackling biological invasions around the world

REGIONAL RESPONSES
TO THE INVASIVE ALIEN
SPECIES THREAT



GISP

The Global Invasive Species Programme



Thailand
Biodiversity
Centre



UNEP



Danish Forest and Nature Agency



United States Government



OEPP, Ministry of
Science, Technology
and Environment,
Thailand



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icipe
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of Insect Physiology
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Ministry of
Environment and
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IUCN
The World Conservation Union



World Bank



SDC



Ministerio do Meio
Ambiente – Brasil



bionet



Makerere
University



Ministry of Tourism,
Environment and
Natural Resources
Republic of Zambia



National
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CAB International



KENYA
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Acknowledgements

This booklet is a synthesis of eight regional workshops on invasive alien species held around the world by the Global Invasive Species Programme (GISP) and three of its partners, The World Conservation Union (IUCN), CAB International (CABI), and the International Centre of Insect Physiology and Ecology (ICIPE). These workshops focused on Eastern Africa (July 1999), the Baltic-Nordic countries (May 2001), Mesoamerica and the Caribbean (June 2001), South America (October 2001), Southern Africa (June 2002), South and Southeast Asia (August 2002), the Austral Pacific region (October 2002), and West Africa (postponed to March 2004). Six of the eight were held under the banner *“Prevention and Management of Invasive Alien Species: Forging Cooperation Throughout the Regions.”* Table 1 summarizes their details.

These workshops were sponsored by a range of different agencies: the U.N. Environment Programme; IDRC Canada; The Swiss Agency for Development & Cooperation; U.S. Agency for International Development; U.S. Fish & Wildlife Service on behalf of the Aquatic Nuisance Species Task Force; U.S. Department of Interior; U.S. Department of State; U.S. Bureau of Land Management; The Nature Conservancy; and The World Bank (Table 1). GISP and its partners are truly grateful to these organizations for their vision and commitment to finding collaborative solutions to the invasive species threat.

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Mauritius and South Africa; IUCN Zambia; Thailand Biodiversity Centre; Smithsonian Institution, National Museum of Natural History, USA; and South African National Biodiversity (formerly Botanical) Institute. The host institutions played a pivotal role – ICIPE, Nairobi; Danish Forest & Nature Agency, Copenhagen; IUCN Mésoamerica, San José; Brazilian Ministry of Environment & Agriculture/Agricultural Research Corporation (EMBRAPA), Brasilia; Zambian Ministry of Tourism, Environment & Natural Resources, Lusaka; Thai Ministry of Science, Technology & Environment, Thailand Biodiversity Centre, and National Science & Technology Development Agency, Bangkok; Bishop Museum, Honolulu; and the Ghanaian Ministry of Environment & Science, Accra. The workshop steering committees gave extensive help in designing effective and high-profile meetings. Technical and scientific accuracy of the original workshop volumes was improved greatly by the editorial teams, especially Jamie Reaser, Laurie Neville, Clare Shine, Nirmalie Pallewatta, and others acknowledged in the proceedings. Core support of the GISP Secretariat by The World Bank (Development Grant Facility) during the finalization and synthesis of the workshop reports is warmly acknowledged.

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Summary

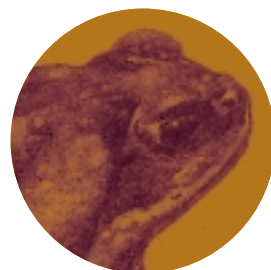
Invasive alien species, or IAS, pose an enormous, and accelerating, cost to economies, societies, and ecosystems around the world. Direct financial costs alone mount into the billions of US dollars per country, per year. The size and seriousness of this threat has only started to dawn on the global community in the past decade, and we remain woefully ill-equipped to deal with it. In particular, small developing countries (especially islands), in many ways the most vulnerable to IAS, are often least equipped to prevent, eradicate and control them. Global trade, transport and travel are overwhelming the capacity of countries to deal with the issue – but also create opportunities to respond effectively.

This booklet synthesizes a series of eight regional workshops on IAS held around the world between 1999 and 2004, organized by institutions in the Global Invasive Species Programme (GISP) Partnership. A total of 99 nations or territories in East, West and Southern Africa, the Baltic-Nordic Region, Mesoamerica and the Caribbean, South America, South and Southeast Asia, and the Austral-Pacific Region met to discuss their perceptions, problems, and needs for better management. The workshops were driven by several questions: How do developing countries, and those with transitional economies, perceive this threat? What is the state of regional capacity and knowledge? What are regions' priorities, gaps, and unmet needs for effective IAS management? This synthesis highlights those priorities, gaps and needs to minimize the ecological, social and

economic disruption caused by IAS infestation. Priorities for financing and other resources are drawn out in an easy reference table (Annex 1). The workshop volumes, available on www.gisp.org or from the GISP Secretariat, give more detail.

The overriding need expressed by most regions is the capacity to tackle IAS effectively. Much better capacity for IAS prevention, eradication, and control is the bottom-line need – technical (scientific, policy, economic, legal), institutional (including educational), and logistical capacity. This includes phytosanitary and quarantine control, early detection and rapid response systems, better field equipment, intersectoral planning, economic valuation, and the integrated policy and legal frameworks needed to underpin effective control. Many countries and regions have started to secure financing and mobilize trained and equipped teams, so that regionally appropriate solutions are found, and momentum is built up. But this is a tall order. It may be decades before capacity meets the need.

Countries within a region vary enormously in their overall capacity and awareness. There is far too little awareness in most countries – at public, political, planning and even technical levels – of the IAS threat and its widespread impacts on the economy, environment, and human health. This tends to mirror variation in size, economic power, and educational opportunities. For example, New Zealand, Australia and Hawai'i (USA) within the Austral-Pacific region, and South Africa and Mauritius in Southern Africa, are



better able to respond to IAS issues than are other countries in their respective regions. We can turn this into an opportunity, rather than a problem. The Pacific region is a good example where expertise and good practices are shared for everyone's benefit. Other regions are following suit.

IAS management in most areas has been relegated to a sectoral activity, especially for the protection of the environment, agriculture, or trade. The challenge is to mainstream this management into national development planning, without delay. Fundamentally, the governments of most countries do not address environmental management at the core of their national development. The few that do are hampered in their capacity to implement. Many countries remain only dimly aware of the costly social, economic, and ecological disruption which inevitably arises from narrow sectoral planning and management. Cases of infestation by IAS are among the starkest examples of unanticipated environmental impacts and misguided planning anywhere in the world. Overwhelmingly, the workshops made clear that *IAS are not just an ecological, or agricultural, or health problem. They are a national, regional and global development problem.*

The GISP partnership workshops emphasized that the time to act is now. Globalization has become a kind of "freight train" of biotic invasion. The costs of prevention are miniscule, compared to the staggering costs of attempts at a "cure." Modest investments in the training, awareness, policy frameworks, and

institutional development that are required now will significantly avert economic disruption, lost trade opportunities, accelerating rates of allergies and contagious diseases, and the breakdown of ecosystem functioning and provisioning of natural resources in the future. If countries do not act, now and in concert, to share expertise, experience and resources, our children will inherit a very different, homogenized, and vastly degraded world.



Table 1.**Regional workshops on invasive alien species held by GISP and its partners**

Region	Organised by	Date, place
Eastern Africa Ethiopia, Kenya, Tanzania, Uganda	International Centre for Insect Physiology & Ecology (ICIPE) in collaboration with GISP, IUCN and others	5-6 July 1999 Nairobi, Kenya
Baltic-Nordic Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia, Sweden	GISP, Government of Denmark, Government of the USA	21-23 May 2001 Copenhagen, Denmark
Mesoamerica & the Caribbean Antigua & Barbuda, Bahamas, Barbados, Brazil, Costa Rica, Cuba, El Salvador, Guatemala, Honduras, México, Nicaragua, Panama, Puerto Rico, Trinidad & Tobago	UICN – Unión Mundial para la Naturaleza / IUCN - The World Conservation Union in collaboration with GISP	11-12 June 2001, San José, Costa Rica
South America Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela	GISP, Government of Brazil, Government of the USA	17-19 Oct. 2001, Brasilia, Brazil
Southern Africa Botswana, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe	GISP, Government of Zambia, Government of the USA	10-12 June 2002, Lusaka, Zambia
South and Southeast Asia Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, India, Indonesia, Laos, Malaysia, Maldives, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam	GISP, Government of Thailand, Government of the USA	14-16 August 2002, Bangkok, Thailand
Austral-Pacific American Samoa, Australia, Cook Islands, Federated States of Micronesia, Guam, Hawai'i, New Zealand, Niue, Palau, Marshall Islands, Samoa, Solomon Islands, Tokelau, Tonga, Vanuatu	GISP, Government of the USA, Bishop Museum	15-17 Oct 2002, Honolulu, USA
West Africa Benin, Burkina Faso, Cameroon, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sénégal, Sierra Leone, Togo	CABI in collaboration with GISP, Government of Ghana, Government of the USA	9-11 March 2004, Accra, Ghana

Main sponsors	Published as
UNEP, IDRC Canada	Lyons, EE & Miller, SE (eds.) 2000. Invasive species in eastern Africa: Proceedings of a workshop held at ICIPE, July 5-6, 1999. ICIPE Science Press, P O Box 72913, Nairobi, Kenya. ISBN 92-9064-130-4. www.icipe.org/invasive
Danish Aid for Environmental Development in Central & Eastern Europe (DANCEE), Danish Forest & Nature Agency, US Dept of State	Reaser, JK, Neville, LE & Svart, HE (eds.). 2002. Management of invasive alien species: forging cooperation in the Baltic/Nordic Region. GISP, Dept. of Biological Sciences, 385 Serra Mall/ Herrin Labs 477, Stanford University, Stanford, California 94305-5020, USA.
US Dept of State, Swiss Agency for Development & Cooperation	Hernández, G., Lahmann, E.J. & Pérez-Gil Salcido, R. (eds.). 2002. Invasores en Mesoamérica y El Caribe/ Invasives in Mesoamerica and the Caribbean. Regional workshop on invasive alien species. UICN/IUCN, Oficina Regional para Mésoamerica, Apartado Postal 146-2150, Moravia, San José, Costa Rica. ISBN 9968-743-62-3. http://iucn.org/places/orma
US Dept of State, Brazil Ministries of Environment and Agriculture	Neville, L.E., Reaser, J.K., Ziller, S.R. & Brand, K. (eds.) 2004. Vol. 1: Prevention and management of invasive alien species: Proceedings of a workshop on forging cooperation throughout South America. Vol. 2: Invasive alien species in South America: national reports & directory of resources. GISP, South African National Biodiversity Institute, Kirstenbosch Gardens, Private Bag X7, Claremont 7735, Cape Town, South Africa. www.gisp.org
US Dept of State, Bureau of Oceans and International Environmental Affairs (OESI).	Macdonald, I.A.W., Reaser, J.K., Bright, C., Neville, L.E., Howard, G.W., Murphy, S.G. & Preston, G. (eds.). 2003. Vol. 1: Prevention and management of invasive alien species: Proceedings of a workshop on forging cooperation throughout southern Africa. Vol. 2: Invasive alien species in southern Africa: national reports & directory of resources. GISP, South African National Biodiversity Institute, Kirstenbosch Gardens, Private Bag X7, Claremont 7735, Cape Town, South Africa. www.gisp.org
US Dept of State, US Bureau of Land Management, The Nature Conservancy	Pallewatta, N, Reaser, JK & Gutierrez, A (eds.). 2003. Vol. 1: Prevention and management of invasive alien species: Proceedings of a workshop on forging cooperation throughout South and Southeast Asia. Vol. 2: Invasive alien species in South-Southeast Asia: National reports directory of resources. GISP, South African National Biodiversity Institute, Kirstenbosch Gardens, Private Bag X7, Claremont 7735, Cape Town, South Africa. www.gisp.org
US Agency for International Development, US Fish & Wildlife Service, US Dept of the Interior, US Dept of State, The Nature Conservancy	Shine, C, Reaser, JK & Gutierrez, AT (eds.). 2003. Vol. 1: Prevention and management of invasive alien species: Proceedings of a workshop on forging cooperation throughout the Austral-Pacific. Vol. 2: Invasive alien species in the Austral-Pacific region: National reports & directory of resources. GISP, South African National Biodiversity Institute, Kirstenbosch Gardens, Private Bag X7, Claremont 7735, Cape Town, South Africa. www.gisp.org
US Dept of State, World Bank (BNPP) through GISP	CAB International. 2004. Prevention and management of invasive alien species: forging cooperation throughout West Africa / Prévention et la gestion des espèces étrangères envahissantes: Mise en oeuvre de la coopération en Afrique de l'Ouest. Proceedings of a workshop held in Accra, Ghana, 9-11 March 2004. CAB International, Nairobi, Kenya. www.cabi.org and www.gisp.org



The context

With the accelerating pace of globalization, invasive alien species have become one of humans' greatest threats to the biological diversity of our planet. Once unappreciated as a "sleeping environmental issue," invasives are now recognized as one of our most serious environmental and economic problems world-wide. Invasive alien species – IAS – are driven by human activities, especially those related to urbanization and to globalized transport, trade, and travel networks.

Aggressive colonists in natural and disturbed ecosystems, IAS can quickly clog and degrade waterways, infest settlements and mountain catchments, undermine food security, and cause or spread disease. They are major problems for national development and economic planning – not just for environmental management. For example, introduced pests in the crops, pastures and forests of India and Brazil have direct annual economic impacts estimated at US\$91 bn and \$42.6 bn respectively – not even fully accounting for damage to ecosystem services. These are serious figures for any country.

One of the best-known examples of unanticipated environmental and socioeconomic impacts is the infestation of Africa's Lake Victoria and other waterbodies by IAS, including water hyacinth *Eichornia crassipes* and Salvinia weed *Salvinia molesta*. Many African countries have experienced disruption of transport, fisheries, water management, irrigation, hydroelectricity generation, and rural livelihoods, with

cascading ecological impacts due to the physical clogging of waterways. Rural villages which depend on subsistence fishing for food security and income are among the worst affected.

Changes in species distribution which we have brought about as a result of increased globalization – via road, rail and shipping networks, the aquaculture, aquarium, pet and garden trades, increased international travel and migration, and agricultural development aid to name a few – have had catastrophic effects on the integrity of ecosystems and the conservation of biodiversity. They have consequently had serious impacts on human health and livelihoods across the globe.

No country can afford to ignore this threat. The seriousness of the problem varies from country to country, but many countries can still tackle the problem before it becomes unmanageable. Countries with major problems have realized, too late, that a small investment of time and money on prevention, early detection and control would have saved a huge amount spent on failed attempts at eradication and the repair of badly disrupted ecological services. Unfortunately, many invasive species took hold of new environments as a result of early human colonizations, from the Polynesians to the British Empire, at a time when human survival and geopolitical ambitions, rather than natural resource management, were at the top of the agenda. However, while most specialists

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accept that some established IAS will never be eradicated, there is a great deal that can be done to control them effectively, using biocontrol and other means. New introductions – the pace of which is accelerating fast - can be prevented, and newly introduced species can be eradicated before they become established.

Global management of invasive alien species needs serious collaborative efforts of many people. This effort has only recently started to take root at regional level in many parts of the world. However, momentum has been building. In 2001-2004, developing country governments agreed on the urgent need to strengthen their capacity to prevent and manage the incursion of IAS. Most of the eight workshops synthesized in this booklet noted that regional initiatives depend largely on the effectiveness of national structures and activities. National capacity building must therefore become a regional priority. Also, at the sixth Conference of Parties of the Convention on Biological Diversity (CBD) in April 2002, the Parties adopted a decision (VI/23) that urges governments to build national capacity to address IAS, in the framework of biodiversity strategies and action plans, and in accordance with a set of guiding principles. This and other CBD decisions have raised the profile of IAS considerably within the environmental management framework, and with an emphasis on mainstreaming IAS within broader national planning.

The stage has thus been set for action. How we respond, and how quickly, will determine our level of success.

In 2001, IUCN published a Global Strategy on Invasive Alien Species, on behalf of GISP (McNeely, Mooney, Neville, Schei & Waage, eds). This strategy integrates key findings from Phase I of GISP, as summarized in the Phase I synthesis conference of GISP in September 2000, Cape Town, South Africa. The strategy has ten elements:

- Build management capacity
- Build research capacity
- Promote sharing of information
- Develop economic policies and tools
- Strengthen national, regional and international legal and institutional frameworks
- Institute systems of environmental risk analysis
- Build public awareness and engagement
- Prepare national strategies and plans
- Build IAS into global change initiatives
- Promote international cooperation to deal with the problems of IAS

These ten elements provide a strong basis for countries and regions to move forward in 'turning the tide' on IAS. Taken together, these tools and approaches will limit the damage of invasion through transport, trade and travel. While the Global Strategy provided a strategic backdrop for the regional workshops, their recommendations and preliminary action plans (see Annex 1) were not explicitly coached into this format. However, without exception, they strikingly mirrored its strategic framework.



The workshops

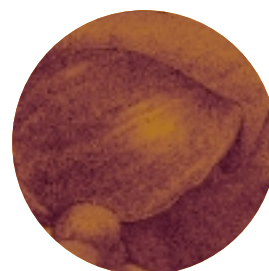
The eight regional workshops – six “core” GISP partnership-organized workshops in 2001-2004, the 1999 Eastern African workshop organized by ICIPE with GISP input, and the 2001 Mesoamerican and Caribbean workshop organized separately by IUCN with GISP input (Table 1) – achieved important and continuing progress in invasive species management at three different levels.

First, the workshops pioneered inter-ministerial dialogue on this subject at the country level. Representatives from ministries of environment and agriculture, and sometimes others, met for the first time on this issue – indeed sometimes for the first time on any issue. An important lesson to be learned is that inter-ministerial contact opens many doors quickly. It is usually forced, too late and often inefficiently, by the emergence of shared problems. The GISP Partnership workshops anticipated this proactively, which was a valuable experience for participants. Most governments will want to set up inter-ministerial committees on invasive species problems, if they have not already done so.

Second, progress was made in the relationships within regions. Delegates were often surprised to realise the extent of shared problems, and found particular value in “early warning” of the severity of potential problems which had already reached outbreak level in other countries. Some countries seemed more proactive and cooperative than others, and this offers clues about how best to proceed in future projects involving more than one country. Southeast Asia, for example, seemed likely to make excellent progress in the next decade through international networks and cooperation.

Third, good links were built between countries and international organizations. GISP core partners, IUCN and CABI, were joined by ICIPE, FAO, IMO, and several bilateral sponsors, particularly the Government of the USA (via USAID, Departments of the Interior and State) and the Swiss Agency for Development & Cooperation. Momentum seemed to be increasing for international financial and technical support in this area. Indeed the prominence of the IAS issue on the global agendas of the Convention on Biological Diversity, International Plant Protection Convention, and increasingly global fora on human health, trade and food security, demands this greater momentum.

The workshops were generally attended by a fruitful mix of diplomats, resource persons, and technical staff from the participating countries. Many of the participants occupied relatively junior technical posts within their organizations, and therefore may not have had sufficient influence to ensure that the workshop outcomes are implemented in their countries. However, some are potential champions of future IAS initiatives – persons with drive, imagination and enthusiasm for the subject – even if they had not yet perceived the subject as of overwhelming importance. These regional and national champions are the seeds of future work, who must be the lead agents for change in their areas, and around whom many of the “sleeping advocates” will rally. We hope that together with the regional reports, this summary booklet will be a useful motivator for their directors, ministers and permanent secretaries. These reports are not for their shelves, but should be regularly-thumbed tools in catalyzing decisionmakers to implement the priority actions identified by the countries and regions.



The regions

The regional workshops are outlined in brief below. Most followed a common format and had common aims (Table 2), with emphasis on prioritizing activities and elaborating a broad regional strategy. Several of the workshops were published in two volumes: a workshop proceedings and a companion Regional Resource Directory (volume of national reports). These directories were based on multisectoral country profile reports (Table 2), prepared and verbally presented by specialists from most countries. There was wide variation between nations in the depth of available information.

Further details are given in Tables 1-3 and in each region's workshop proceedings. Declarations or conclusions from the workshops are reprinted in Annex 2.

The Eastern Africa and Mesoamerican & Caribbean workshops differed somewhat from the others, as they were independently initiated and run by partners, albeit with GISP collaboration. The West African workshop, initiated and run by CABI, closely followed the format of the other core GISP workshops and was published by GISP.

Table 2.
Format summary of the six “core” GISP partnership workshops

Overall workshop objectives

- Raise awareness of the IAS problem and opportunities to manage it;
- Assess current status of the problem in the regions and countries;
- Forge cooperation within and between nations across the scientific, economic and policy sectors (especially agriculture and environmental protection);
- Lay the groundwork for development of a regional IAS strategy.

Overall format of the country profile reports for the Regional Resources Directories

Each participating country was invited to submit a country profile report that included:

- current information on all known IAS,
- existing strategies for preventing and managing IAS,
- list of departments/ministries concerned with IAS, and their objectives,
- priorities for future work on IAS,
- a list of in-country IAS experts, including contact details,
- a list of relevant references and websites.
- current needs for which external support is needed (some workshops only).

Participants were asked to provide information relevant to both agriculture and the environmental protection sectors, and to work across multiple ministries when possible. The ability of each country to provide this information varied considerably, and depended upon the information already available on IAS in their country, existence of in-country technical expertise, and the priority attached to IAS issues by government.

Questions framing the working group discussions

1. What are the main challenges and mechanisms for addressing the problems posed by IAS within your country?
2. How do you perceive the needs and opportunities for co-operation on IAS issues throughout the region?
3. What do we want the region to achieve collectively?
4. What are the challenges to achieving regional cooperation?
5. What are the necessary elements for a strategy to facilitate regional cooperation?
6. How can we promote collaboration and cooperation within existing frameworks?
7. What are the existing resources that can be utilized to achieve regional cooperation?
8. What additional resources are needed?
9. Who needs to be involved? When and where?
10. What are the steps required to establish regional collaboration and promote action?
11. What are the steps that can be taken immediately and who should take them?



The workshops

Eastern Africa

The regional workshop, “Invasive Species in Eastern Africa” was organized by the International Centre of Insect Physiology and Ecology (ICIPE) at its Nairobi headquarters on 5-6 July 1999 (Table 1). More than 70 people from 41 institutions in Ethiopia, Kenya, Tanzania and Uganda attended, mainly professionals in conservation, agriculture, forestry, research, land management, academia, information technology, and law and policy. Speakers were from Kenya, Tanzania, Uganda, South Africa, Mauritius, Malawi and the United Kingdom.

This first workshop of the series was independently conceived by ICIPE, with the collaboration of GISP, IUCN, CABI and regional partners. The workshop broke new ground and differed somewhat in structure from the later GISP workshops. It aimed broadly to explore the status of IAS in the region, thereby serving some of ICIPE’s community outreach and biodiversity conservation programme aims. It did not include formal country reports, but had country-specific working group discussions, and a questionnaire-based survey of participants on their country situations. Working groups also met on the role in IAS work of EAFRINET (the Eastern African “loop” of the taxonomic network, BioNET International); on strengthening research and research links; on the coordination of regional control efforts; and on capacity building and implementation. Speakers presented a global overview, two national case studies from outside the region (Mauritius and South Africa), two regional resource papers on economics, policy and law, and four regional case studies on the use of biological specimen records to track weed invasions; on aquatic IAS; on stem borer (*Chilo partellus*) invasions in Africa; and on an agroforestry tree infesting the East Usambara mountains. Two days of activities included a busy Information Fair, a public lecture and panel discussion. The workshop was captured on video by the National Museums of Kenya.

Southern Africa

The regional workshop “Prevention and management of invasive alien species: forging cooperation throughout southern Africa,” the first on IAS for this region, was organized by the GISP, the Zambian Ministry of Tourism, Environment and Natural Resources and the US Government, in Lusaka, Zambia on 10-12 June 2002 (Table 1). A total of 45 participants from 11 southern African nations and GISP, IUCN, CABI, FAO, and IMO attended, mainly government and academic professionals in environmental protection, agriculture, plant pathology, forestry, water affairs and maritime affairs. Eleven nations (Botswana, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe) presented IAS country profiles. Background papers were given by speakers from the USA, Kenya, Italy, France, South Africa, United Kingdom, Mauritius and Zimbabwe.

IAS are an extremely serious problem for many countries in the region, especially in the biodiversity hotspots of the Cape Floral Kingdom and Eastern Arc Mountains, the Indian Ocean islands, and in wetlands, watersheds and major ports of the region. Most of the country profiles highlighted major gaps in management capacity, baseline data and public awareness, although there was enormous variation. Biodiversity loss, reduced agricultural yields, ecosystem degradation and water management challenges were identified as the big issues, with South Africa’s national Working for Water programme offering a groundbreaking model for effective and socially beneficial solutions. Mauritius’ experiences with land conversion and IAS offer important insights into the scale, methods, and costs of control, even for small islands.

West Africa

The West African regional workshop, "Prevention and management of invasive alien species: forging cooperation throughout West Africa," originally scheduled for 2002, was co-hosted by the Ghanaian Ministry of Environment and Science, US Department of State, and CABI with additional support of GISP and the IUCN in Accra, Ghana on 9-11 March 2004 (Table 1). Fifty-seven delegates from 16 regional countries plus Kenya, South Africa and the USA participated, including senior agriculture, environment, fisheries and other professionals in government, academia, NGOs and the media. In addition to country profile reports for the Regional Resources Directory, delegates were invited to contribute focused poster papers and participate in panel sessions. The workshop was conducted in French and English (simultaneous translation), with publication in both languages. It adopted a particularly high political profile, being opened and addressed by a range of senior international, regional and national officials.

This region, like most, faces significant challenges for implementation and collaboration at national and regional levels. These include difficulties in establishing effective mechanisms for institutional coordination, raising public and political awareness, access to available technical information (including on taxonomy and environmental, economic and social impacts), developing effective and regionally harmonized policy frameworks, and building adequate financial, human and institutional capacity. It was emphasized that regional collaboration is difficult if national systems are not functioning. Language barriers, regional conflicts, bureaucracy and low political priority for IAS control present major obstacles. However, the region has important expertise in this field. It can build on the framework provided by international organizations, conventions, and political collaboration mechanisms, including the Economic Community of West African States (ECOWAS), New Partnership for Africa's Development (NEPAD), and

several existing agricultural, phytosanitary and drought-related cooperation agreements. All or most countries are members of key bodies: the Convention on Biological Diversity, World Trade Organisation, International Plant Protection Convention, World Organisation for Animal Health, Codex Alimentarius Commission, International Maritime Organisation, and International Civil Aviation Organisation.

Baltic-Nordic

A three-day meeting of all the Baltic Sea countries, Norway and Iceland, plus representatives of the European Union and international organizations, was held in Copenhagen, Denmark, 21-23 May 2001 (Table 1). This workshop was supported by the US State Department, with supplementary funds from the Danish Ministry of Environment and Energy. It was the first of the planned core GISP partnership workshops. In contrast to later workshops, country reports were not presented. Instead, expert resource papers were followed by working group sessions.

Discussions focused on the Baltic-Nordic region's vulnerability to IAS and its variance in national capacity. Forty-five participants contributed to the meeting, which focused on a current regional status assessment and initial steps towards solutions, including preparation of a draft regional action plan.

This region is characterized by a certain patchiness of interest in the issue. The Baltic countries, Russia and Poland perceive other environmental problems as of higher national priority, whereas concern about and investment in IAS control is growing quickly in Germany and the Nordic countries. However, the meeting's recommendations set in motion a very constructive framework for action, identifying regional cooperation mechanisms, elements of a regional strategy, appropriate measures of success, the key players, gaps, resources, and challenges for regional cooperation, and explicit steps needed to establish cooperation and promote action (Annex 1).



The workshops

Mesoamerica and Caribbean

The Mesoamerica and Caribbean regional workshop, held in San José, Costa Rica, 11-12 June, 2001, was organized by IUCN's Regional Office for Mesoamerica with the participation of 40 senior specialists, administrators and diplomats from 14 regional countries (Table 1), the USA, IUCN (including its Regional Office for Mesoamerica and its Invasive Species Specialist Group, ISSG), Sistema de la Integración Centroamericana (SICA), Environmental Cooperation Commission of the North American Free Trade Agreement (NAFTA), International Regional Organization for Plant and Animal Health, OIRSA, and the International Atomic Energy Agency, IAEA. In contrast to most of the other workshops, the proceedings of this workshop were published as an attractively formatted and bilingual popular booklet, for added impact. Country papers were not presented; instead a number of case studies highlighted the scope of the problem. The workshop's main aims were broadly to assess the severity of IAS impacts in the region and raise public and political awareness, in order to launch the region on full-scale IAS work. A range of high-profile and technical speakers helped achieve this result.

The most significant outputs of the meeting were consensus on the eight priority areas for action (local and regional capacity, education, legal issues, policy and institutional frameworks, information management, economic aspects, research, and technical aspects) and a linked set of elements of a regional action plan (Annex 1 and Annex 2).

South America

A three-day meeting in Brasília, Brazil, was held by GISP on 17-19 October, 2001. Twelve countries from the region plus international experts from GISP, the US Government, the FAO and IMO attended the workshop, supported in part by the US Department of State. Seven of the countries (Argentina, Bolivia, Chile, Colombia,

Peru, Suriname and Uruguay) presented country reports (Table 1).

This meeting, like most of the other core GISP regional workshops, resulted in the production of a draft outline for a regional IAS resource directory, a useful compendium of threats, priority species, and available resources. The meeting also identified initial steps to tackle IAS threats to the region (Annex 1) and produced a declaration (Annex 2). In common with other regions, inadequate technical and institutional capacity and mechanisms for collaboration were highlighted as the main constraints facing IAS management in South America.

The workshop highlighted the need for cross-sectoral harmonization and cooperation on regional level. An accessible, reliable internet-based regional information system was regarded as a priority tool to be developed with the aim of detecting and reporting new invasions and sharing experiences. In addition, the need for cooperation within existing regional legal frameworks was regarded as another important priority area.

South and Southeast Asia

The South and Southeast Asia regional workshop, organized by GISP on 14-16 August 2002, was attended by 62 participants and observers from 19 Asian countries and numerous organizations, many of whom were high-level policy officials in the environment and agricultural sectors. Regional and international organisations represented were the ASEAN Regional Centre for Biodiversity Conservation (ARCBC), CABI, International Plant Protection Convention (IPPC) Secretariat, Food and Agriculture Organization (FAO), IUCN, South Asian Cooperative Environment Programme (SACEP), and Japan National Institute for Environmental Studies. The Government of Thailand, as host, was represented by the Office of Environmental Policy and Planning (OEPP) and National Science and Technology Development Agency (NSTDA) of the Ministry of

Science, Technology and Environment, and the Thailand Biodiversity Centre (TBC). While Asian governments and organisations already know the need for regional cooperation on IAS issues, and have worked together at the CBD and IPCC, never before had so many different sectors collaborated to develop a framework for IAS prevention and management.

Asia is experiencing a significant increase in economic activity within the region, and between it and other parts of the world. Adoption of increasingly liberal trade policies (e.g. emergence of preferential trade agreements), higher volumes of tourism, and higher rates of land use change will undoubtedly facilitate more biological invasions. The risk that these alien species will cause significant harm is exacerbated by a considerable lack of awareness of the severity of the IAS problem (especially among policy makers), as well as seriously inadequate technical support. The emergence of China, for example, as a major economic development hub, itself poses enormous challenges for IAS management. (China was not represented at the workshop, but was the subject of focused national IAS meetings in 2004.) However, the 19 countries present made major strides in outlining the basis for a regional IAS strategy.

Austral Pacific

The Austral-Pacific workshop was held by GISP at the Bishop Museum, Hawai'i, on 15-17 October 2002. It was attended by 49 participants from 17 Pacific Island Countries and Territories (PICTS), many of them high-level policy officials in the environment and agricultural sectors. Contributions were also received from French Polynesia. Organizations included the Secretariat of the Pacific Community (SPC), South Pacific Regional Environment Programme (SPREP), CABI, IUCN (Invasive Species Specialist Group and Commission on Environmental Law), Pacific Science Association, Conservation International, The Nature Conservancy, and the Gordon & Betty Moore Foundation.

The Austral-Pacific region has many characteristics that make regional coordination on invasive alien species issues critically important. For example, 98% of its 30 million km² is ocean; the remaining 2% contains 7500 islands, of which just 500 are inhabited. Many islands in the three subregions – Polynesia, Micronesia and Melanesia – are small and widely scattered. Whereas the ocean once provided a natural barrier against the spread of pests and diseases, the rapid expansion of trade, travel, and transport now make the region particularly vulnerable to the devastating impacts of IAS. Furthermore, Pacific islands share trading routes, partnerships, and regional infrastructure which can increase opportunities for the introduction of IAS. The inhabitants of the Austral-Pacific region, therefore, have a mutual interest in preventing and managing IAS at the point of export and import.

While the Austral-Pacific governments and organizations already saw the need for regional cooperation on IAS issues, and have worked together in the past through the SPC and SPREP, never before had such a diverse and multisectoral group been convened. The meeting emphasized that IAS are among the region's most devastating economic and environmental problems. Case studies, national reports, and working group formulation of the elements of a regional strategy formed the detailed and substantive core of this workshop and its resulting publications (Annexes 1 and 2). A plenary resolution included the need for key actions (Annex 2): stakeholder collaboration and mainstreaming; strengthened border control; development of detailed IAS national action plans or similar frameworks, including national focal points and committees; long-term prevention of establishment through heightened public awareness and involvement; national professional capacity building, e.g. for surveys and long term monitoring; increased use of existing resources, ranging from traditional knowledge and practices to the GISP Toolkit. The island state members had enormous commitment to this issue, based on their very negative experiences so far of biodiversity and economic loss through AIS.

Common threads and gaps

Despite the very different histories, cultures, trade routes and biodiversity of these eight regions, several important common threads emerged from the regional workshops. This booklet highlights the most glaring, frequently cited gaps for financial and technical intervention by donors and resource agencies.

The benefits of contact

Participants from the regions consistently noted that there had been a lack of contact and information surrounding this issue in the past – within and between countries; between their own organizations and others in the same field; between their organizations and those in different IAS fields; between individuals and agencies performing the same functions in neighbouring countries. For these people, the contact was both refreshing and revealing. The value of lessons learned and shared experience is often incalculable, but always immensely rewarding. Furthermore, this contact allowed the collation of scattered information under a novel framework, of invasive species, that challenged participants and forced them to see new parallels and common ground.

The variance (and potential) in regional capacity

Capacity for IAS prevention, eradication, and control is patchily distributed in every region, without exception. The reasons for this are not surprising, as capacity springs directly from national policies, cultural histories, educational levels, economic wealth and public awareness of a problem. Rather than being a problem, we should see this variance as an opportunity. Some countries, like New Zealand and Australia in the Austral-Pacific region, South Africa and Mauritius in Southern Africa, Denmark and Norway in the Baltic-Nordic region, and Singapore, Malaysia and Thailand in Southeast Asia, stand out as potential powerhouses for helping to strengthen the control of IAS in their regions. It is clear that numerous other countries are not far behind, and have developed some innovative, surprising examples of good practice and interactive management.

The common gaps

Although the degree of need and the specific details differed greatly between countries and regions, it is fair to say that every region identified at least six major gaps in common: insufficient **technical capacity** (scientific, policy, enforcement), **institutional coordination, political will, public awareness, policy and legal frameworks**, and **financial resources**. Some regions, such as the Austral-Pacific and South-Southeast Asia, highlighted extremely specific, practical needs, such as field trucks and chemical control applicators, along with the broad sweep of needs such as “greater political support” and “technical training.” It is clear that these workshops, especially for some regions, were but the first step along a road of perceiving and framing their explicit capacity needs. We hope that the summary of priority actions and gaps (Annex 1) will be a useful guide for financing and technical organisations.

Given the magnitude of the problem, and its overriding importance for global development, it's fair to say that very substantial – even massive – investment in rectifying the major gaps in these regions will be needed to turn the tide of invasive species. In the order of hundreds of millions of US dollars will surely be needed for the effort in the next decade, from various sources. These sources will need to be increasingly innovative, and perhaps obvious. They need to start with government reorientation of budgets away from problem-causing activities towards “clean” sustainable ones, and a mechanism to fund IAS management through levies on the industries, users and other parties which are vectors of invasion – as part of the costs of doing business.

It is also true to say that countries and regions across the world may be forced to make do with somewhat less than they need. Affordable IAS management approaches for developing countries, such as those being explored by The Nature Conservancy, one of GISP's core partner institutions, are desperately needed. As part of these affordable strategies, the measures summarized in this booklet – the collaborative networks, the information sharing, the regional training, the institutional capacity

building, the rapid response teams deployed throughout a region – all these will be enormously

effective in avoiding wasteful duplication of activities and re-invention of the proverbial wheel.

Six major gaps common to the regions <small>(see details in Annex 1)</small>	Global Strategy element
<ul style="list-style-type: none"> ■ insufficient technical capacity (scientific, policy, enforcement) ■ institutional coordination ■ political will ■ public awareness ■ policy and legal frameworks ■ financial resources 	<p>1,2,4 3,5 cross-cutting, especially 7 7 4,5 cross-cutting</p>

Priorities for the future

The history of humankind is littered with harsh lessons, such as those of HIV/AIDS and global warming, where a failure of leadership to listen to specialist advice meant that the eventual action taken was too little, and almost too late. And, by then, the action taken was also infinitely more expensive than it might have been much earlier. Invasive alien species are a good example of an issue where if we do not act while we can, the ultimate costs – both direct and indirect – will be absolutely staggering, and will indeed undermine decades of development gains. However, humankind does not have to be cursed with such failures of leadership. The rapid responses to invasive disease outbreaks, such as that of Severe Acute Respiratory Syndrome (SARS) in Asia, for example, show that where there is a will, there is a way – quick and effective containment and eradication.

The needs for the future of IAS management are clear. The regions have set themselves multiple, and for the most part realistic, goals to work on over the next decade. Massive reallocation and leveraging of resources, including technical resources, will be needed to support the effort. But reference to the priorities and gaps cited here, with the detailed workshop proceedings for

further detail, should help agencies guide the use of these resources most efficiently. Some of the regions have made excellent progress since the workshops. The Baltic-Nordic region, for example, has initiated a regional IAS project covering 11 countries, as a direct consequence of relationships built at the workshop.

In the longer term, and at all levels, from the local village or wetland scale to the global scale, practitioners need to keep their eye on a vision for the future. IAS management has the real danger of becoming a fire-fighting activity, on which water is wasted through unstrategic crisis management. We all need to re-evaluate our activities regularly. Are some achieving our goals, while others have become a black hole, into which money and energy pours fruitlessly? The guidelines, best practice manuals and case studies which the GISP Partnership and scientific community have developed are important tools for evaluation and adaptive management. It is also important that countries and specialists continue to ask for help if they feel isolated or unsure of the best course of action. The Global Invasive Species Information Network and the GISP website (www.gisp.org) will increasingly link users to our partners and their resources.

Annex 1.

Elements of regional strategies to counter the invasive species threat: Priority actions identified

Workshop: Eastern Africa 1999

This first workshop included preliminary discussions on the topic, but did not develop formal elements of a regional strategy. Some identified gaps, on which a strategy could be based, are:

Basic information

- More IAS information on which invasive species are now in the region, where they are, their rate of spread, and the nature and fate of control efforts
- Better systems of communication about invasive species within and between countries
- Better links between managers and researchers so that research serves stakeholders' needs
- Strengthened capacity to identify and, in some cases, control invasive species – through extra attention to research, monitoring systems, and training staff in control methods
- Better estimates of the ecological, social and economic costs of IAS, and benefits of programmes to control them, to help marshal political will and subsequent financial support

Strengthening research and research links

- Research gaps on IAS status, distribution, ecology, biology, vectors, ecological, economic and social impact of IAS, control methods, particularly biocontrol agents, checklist and utilization

Linkages that need to be built and/or strengthened, to improve IAS research and capacity:

- Links between universities, other research institutions, regional governmental institutions that can help influence national and regional policy, stakeholders and users
- A Research Institute on Invasive Species to serve as a focal point for research and service, helping to coordinate efforts across species and countries
- Links between IAS researchers and curriculum development initiatives for better IAS training

Increasing or leveraging funding will require:

- Sensitizing national governments about the need for more research on IAS
- Building partnerships between university students looking for IAS projects and management agencies that are often short-staffed

Coordinating regional IAS control efforts

A structure proposed by one of the working groups entailed:

- A Regional Steering Committee (1-2 persons from each of Ethiopia, Kenya, Tanzania, Uganda)
- One or two lead institutions in each country, represented on the steering committee
- Recommended institutions: Ethiopia – Environmental Protection Authority and Institute for Biodiversity and Conservation Research; Kenya – National Museums of Kenya and National Environment Secretariat; Tanzania – National Environment Management Council; Uganda – National Environment Management Authority
- Relevant institutions (e.g. government departments, NGOs, CBOs) supporting the lead institutions to implement national strategies
- Mechanisms to help coordinate future activities:
 - Regional newsletters, organized by EAFRINET
 - Regional Steering Committee meetings every 2 years
 - Continuous communication and linkages via email

Capacity building and implementation

- Human resource capacity may not be lacking, but needs many kinds of people, including parataxonomists who can serve as a rural early warning system with little additional training
- Training is more efficient if targeted at potential local secondary trainers
- Training should cover a range of management methods, e.g. physical, biological, chemical
- Financial capacity building is also needed, starting with cost-benefit analyses

There is sufficient knowledge, enthusiasm and ideas to carry forward an IAS initiative within Eastern Africa, and the participants formed a loose network for supporting such an effort. EAFRINET volunteered to serve as a coordinating focal point for national and/or regional projects on IAS.

Workshop: Baltic-Nordic 2001

Immediate or short term actions

- Educate high-level staff on the results of this workshop
- Identify leadership and coordination mechanisms through government and sectoral focal points (e.g. ministries of transport, agriculture), where possible using existing institutions and initiatives
- Develop mechanisms to engage local agencies and communities
- Evaluate best practice guidelines and lessons learned in other areas, e.g. GISP Toolkit
- Identify financial resources for addressing priorities (short and long term)
- Create and share lists of IAS
- Initiate planning for a follow-up meeting on information-sharing mechanisms, e.g. GISIN, as well as management and coordination methods
- Establish a list-serve to facilitate communication among participants
- Develop a Regional Resources Directory and electronic mechanism to report on IAS problems, establish priorities, species lists, activities, policies, and databases (etc.) within each country
- Establish a committee to facilitate development of regional task force and strategy and action plan
- Expand the Nordic information on IAS experts to include information from the Baltics

Longer-term or ongoing actions

- Incorporating the IAS issue into existing national programmes
- Include a wider selection of ministries and trade related (industry) sectors in future meetings, planning and projects;
- Engage local agencies in relevant activities
- Set up an interdisciplinary research programme to analyse economic and other costs (management costs and losses) associated with IAS in the region, and use to build political awareness and support
- Establish a team to develop systems for early warning, inventorying and monitoring, and reporting; assess IAS pathways into and out of the region and rank them by risk, and support research on and development of new environmentally sound, humane methods of IAS prevention and control
- Baltic-Nordic governments should compile a directory of relevant laws and policies in the region, and use this to identify and implement a strategy for filling gaps
- Establish a regional task force for the Nordic-Baltic region to address IAS
- Develop a regional strategy for IAS, by establishing:
 - Regional “task force”
 - Appropriate tools (education, information sharing, monitoring results) linking throughout the levels of government and stakeholders
 - Internet-based network of workshop participants (e.g. list-serve, mail groups etc)
- Links to relevant sectors and agencies within governments (including a timeline and strategy for engagement and action within countries to drive policy decisions)
- Procedures for monitoring and evaluating progress



Elements of regional strategies to counter the invasive species threat: Priority actions identified

Workshop: Mesoamerica and the Caribbean 2001

Regional political-institutional sphere

- Promote the existence of a regional coordinating entity with national counterparts
- Integrate existing institutional frameworks (i.e. political, legislation, programs)
- Define a regional authority for monitoring and evaluation of IAS
- Involve existing regional organizations (CCAD, OECS, CARIFORUM, etc.)
- Strengthen SICA-CCAD regional structures to incorporate implications of IAS
- Influence development policies to advocate consideration of impacts of IAS
- Determine the contribution of existing policies regarding control of IAS, or vice versa, promotion of their presence and propagation
- Promote education for leaders regarding problems and the solutions proposed
- Pursue harmonization of global, regional and national policies relating to this theme
- Promote the design of regional and national strategies concerning IAS
- Promote knowledge of the theme to encourage political will

Legal sphere

- Identify and critically examine existing norms and the complete legal framework of laws and regulations, international treaties, agreements, decrees, etc.; locate gaps and constraints and prioritize them
- Formulate pertinent recommendations for the complementarity (harmonization, parity) of legal instruments
- Generate a catalogue of current and regionally relevant international legal instruments about or related to the material, interpreting their implications in the international arena
- Make a comparative analysis of the legal framework and the jurisdictions of pertinent national, regional and international institutions in order to recommend the best forms of coordination and interaction

Capacity sphere

- Identify and critically analyze local institutional and organizational capacity (personnel and infrastructure)
- Build technical capacity for economic valuation in countries of the region
- Require the inclusion of economic valuation in plans for addressing IAS
- Assess the requirements of several of the local actors interested in improved capacity and ability (universities, ministries of environment, agriculture, health and trade, fisheries, etc.)
- Complete an inventory of existing information (quality, quantity and location)
- Complete an inventory of current users and establish ties with them
- Emphasize meta-information systems: design and define their structure, norms and protocol based on the results of a workshop organized for this purpose
- Promote the formation of information centers or banks for exchange or compilation of experiences
- Complete inventories/ lists of IAS present in the region
- Identify species and look at the level of their economic impact
- Generate the information essential for talking about the comparative costs of addressing these problems in terms of cost-benefit, prevention and control

Academic sphere

- Compile a directory of regional scientists involved in this theme
- Hold a thematic meeting to identify the priority IAS problems that will be studied in detail
- Formulate a catalogue of needs for future research
- Work with universities to include IAS on their curricula
- Update curriculum in formal education (primary and secondary school, if appropriate)
- Design courses on IAS under the slogan, "Education for responsible trade and tourism"
- Translate, adapt and create training materials
- Prepare guides and manuals for government officials at different levels
- Encourage extension and advocacy activities related to invasive species, aimed at different audiences of the public

Workshop: South America 2001

Harmonisation and cooperation

- Define areas in which there are already agencies at work, so that resources are not duplicated
- Identify international and regional organisations active in the field, such as IICA, FAO, OEA
- Define nations' problems, to facilitate cooperation between nations with the same problems
- Stop bickering between agricultural and biodiversity sectors
- Identify common problems, risks and themes
- Minimise the problem and understand how to live with the invaders
- Facilitate relations with rural communities, and between rural and city dwellers, on IAS
- Develop a network of phytosanitary and legislative information and risk analyses
- Define responsibilities to ensure speedy action when a new invasive species is detected
- Limit extensive efforts to identify the pests, because it is very expensive. Countries need to notify others immediately about the existence of pests

Build technical and financial capacity for assessment and action

- Secure financing
- Governments should provide funds to do the work
- Intensify and create capacity so that people's mind-sets can be changed
- Conduct a cost-benefit analysis
- Create small, high-powered and informed teams of 3-4 persons, with legislative back-up, who know how to recognise and counteract invaders
- Create a working group or national commission to start working with existing information

Information and monitoring

- Set up an accessible, reliable, internet-based regional information system between countries to detect new invasions by foreign species and share experiences
- Monitor the implementation of IAS activities
- Develop a vision for the ecosystems, and identify ecoregions
- Develop working guidelines adapted to each region or country
- Define when a species can be regarded as established in a region, and define strategies specific to different stages of a biological invasion
- Assess potential and/or real risks of an introduction, based on rapid identification measures
- Capture data on worldwide spread of pests with different names for easier control and study
- Discuss pests that have not been detected locally

Education and awareness

- Integrate IAS education right from the primary school level for all Latin American states
- Educate and sensitise politicians and populations
- Provide legislative and technical information

Promote cooperation within existing regional frameworks

- New agricultural and fisheries standards have been drawn up; all other areas should follow
- Mercosur and the Andean Community should reinforce specific agreements in this field
- Strengthen border controls, and conclude regional agreements in this respect
- Use regional and international resources: CBD, Cites, Ramsar, FAO, GEF, IABIN, COSAVE, IICA, CAF, IPPC, IMO, OIE, OEA, OPAS (Panamerican Health Organisation), SBC, IUCN, WWF, WCMC, IMO, Mercosur, Andean Pact, Amazonian Cooperation Treaty, OMC, TCA, IDB, World Bank, UNDP, PNUMA, CPPS, CEPAL, regional academic networks, APHIS, national agencies (except in Brazil), embassies. Information networks: Clearing-House Mechanism of the CBD, Interamerican Biodiversity Information Network (IABIN), Invasive Species Information Network (13N)
- Programmes that could have the greatest impact in Latin America include: GISP, Global Water Programme, COTASA (Andean Technical Committee on Agrofiseries Co-operation) and COSAVE (within Mercosur). This mechanism is important for any intergovernmental initiative, and has a joint health information system with the European Union

Elements of regional strategies to counter the invasive species threat: Priority actions identified

Workshop: Southern Africa 2002

Establish national and regional focal points

- Use existing CBD national focal points, and Southern African Biodiversity Support Programme (SABSP) and GISP secretariats as regional focal points, in the interim

Raise awareness / advocacy

- Produce PIU/ GISP report on current and future impacts of IAS in SADC, as advocacy aimed at decision-makers
- Aim to create enabling environment for optimal regional IAS interventions

Build capacity

- Ensure availability of necessary expertise, experience and infrastructure at national level
- Train for requisite capacity, including empowerment of marginalized groups

Conduct inventories

- All national inventories undertaken by achievable date, with GISP expertise if needed
- GISP to assist in understanding vulnerability to trans-boundary invasions from non-SADC areas (including marine)
- Synthesis of work in countries done by achievable date

Secure funding

- National funding strategies developed and implemented
- International funding strategies sought for regional work, including NEPAD projects, regional GEF-funded projects linked to collateral funding possible through Working for Water's existing budgets, EU, FAO, USAID, etc.

Establish institutional arrangements

- National integration of IAS work through implementation agencies ("one-stop shop")
- Regional "secretariat" to oversee IAS work in the region
- Formal links to GISP and FAO

Implement prevention projects

- Risk assessment capacity developed at national level
- Regional risk assessment profile done at PIU/GISP level
- Import/export control through regional role models, national application of WTO agreements

Implement control projects

- Integrated IAS management through role-model projects, both those driven within countries and regional showcase initiatives (possibly through NEPAD/GEF, with a strong developmental basis where practicable)

Develop policy/ strategy/ planning

- Need to develop timeframe for national and regional outputs

Establish legislative frameworks

- Develop comprehensive, enforced national legislation complimenting control and educational efforts
- Develop regional legislation for enactment within SADC

Promote research and development

- Identify key areas of research

Undertake monitoring and evaluation

- Ensure optimal returns on investment at national and regional levels

Develop networks and communication links

- Networking, linking, channelling of information and co-operation

Workshop: South and Southeast Asia 2002

Coordinate effectively at regional, sub-regional and national levels

- Provide greater co-ordination between national institutions to permit consensus building on approaches to address the problems of IAS
- Establish or strengthen IAS focal points at the national, sub-regional and regional levels
- Define existing national and regional institutions' roles and make effective use of existing resources. This may require revisions of some institutional roles to accommodate IAS issues
- Prioritise programme actions and identify lead agencies/actors at national and regional levels
- Establish regional coordination mechanisms that will obtain greater support from international institutions

Raise the profile of IAS and their threat in the region

- National workshops, extension services, publicity campaigns, printed and electronic media should be used; marketing of problems and management of IAS are needed
- Some countries in the region have had impressive gains in computer literacy especially among their youth. Use of information technology and literacy should assist awareness campaigns
- The formal education (school and tertiary) sectors are key partners in the production of future policy and decision makers, and should give greater importance to the topic of IAS at schools

Formulate and implement a regional strategy on IAS

- Obtain financial and technical support, including from the private sector and industries likely to introduce IAS, and from international and government institutions
- Establish regional expert groups to develop common definitions of IAS and address other technical aspects
- Facilitate the development of tools for management of IAS, including common quarantine protocols applicable at national and regional levels
- Facilitate the development of appropriate policies and legislation
- Develop regional regulatory framework and harmonisation of legal instruments

Exchange information

- Establish clearing-house mechanisms at regional, sub-regional levels alongside national focal points for greater effectiveness and speedier action
- Establish networks for information exchange
- Create regional and national databases for pest risk analysis and assessment

Base national and regional actions in sound science

- Conduct a regional assessment of status, trends and major threats, ecosystem impacts, economic impacts, etc.
- Apply latest research knowledge to understand the susceptibility of Asian ecosystems to invasions of IAS

Build and strengthen the capacity for action

- Develop human resources
- Fulfill training needs at national and regional scales
- Enhance intellectual capacity through education systems
- Enable community participation

Build political commitment for appropriate policies, budgets, legislation and enforcement and longer term focus on IAS

- Organise national workshops on IAS that brings together many stakeholders, including those from the local community level, as a way of obtaining joint political commitment

Promote collaboration within existing frameworks

- Design nationally appropriate mechanisms, avoiding a prescriptive approach
- Ensure national mechanisms are broad-based and inter-departmental
- Establish national technical and policy expert groups to support national coordinating committees and provide independent expertise

Elements of regional strategies to counter the invasive species threat: Priority actions identified

Use sub-regional and inter-regional approaches in developing further collaborative work

- There may be a need for an equivalent of ASEAN's ARCBC for the SAARC subregion
- The sub-region has evolved through geologic time with similar flora and fauna
- ASEAN and South Asia have rather different trade partnerships and transport pathways

Use existing resources to strengthen regional collaboration

Participants identified a series of institutions, programmes, and mechanisms that can contribute to regional cooperation, in Appendix 1 of the workshop proceedings.

- Each country can provide its own human resources, its already available information, its experiences of managing IAS, its NGO network and resources, etc
- Regional and sub-regional organisations can provide technical support, access to databases, and political support for the formulation of policy, legal and institutional arrangements
- Multilateral and bilateral funding organisations active in the region can support regional and sub-regional cooperation
- Keep donors informed of the conclusions of meetings such as this and of the importance of IAS at national level
- Explore mechanisms for region-to-region links
- Global organisations and conventions can contribute to regional activities and provide links to other regions and activities, including through thematic work programmes
- Multilateral environmental treaties can help achieve consistent and harmonised approaches
- Consider incorporating IAS elements into:
 - Existing conventions (decisions, recommendations, national/regional workplans)
 - International mechanisms and processes (e.g. standard-setting)
 - International certification schemes (e.g. possible incorporation of IAS elements into forest certification schemes, links to International Tropical Timber Organisation)
- Use non-institutional resources:
 - Compile resource directory of IAS experts, available guidance, manuals and training programmes of IAS in the region
 - Identify and make better use of existing regional expert groups dealing with specific IAS aspects, e.g. plant health (within APPPC) and animal health (linked to OIE)
 - Actively engage existing industry/trade/producer groups that are commercially involved in IAS (agricultural commodities, ornamental fish, tourism, transport etc) and ensure they are able to contribute practical expertise and financial resources

Additional resources are needed

- Human resource development, especially in taxonomy and information technology
- Specific IAS-related programmes to be developed within existing regional institutions (specifically ASEAN and SAARC)
- As a priority, these should provide for regional and sub-regional assessments of IAS problems, their pathways of introduction and monitoring
- A regional steering committee/mechanism to co-ordinate and integrate the elements of a regional strategy on IAS and all the participating countries

FAO was mentioned as a possible node for regional coordination, as a regionally active and a United Nations organization whose mandate (agriculture, forests and fisheries, but not all aspects of the environment) covers nearly 50% of IAS information at present.

Who should be involved?

- Establish a Steering committee of all national government ministries (eight SAARC countries and 10 ASEAN countries). The steering committee could also be at the sub-regional level and use existing structures, e.g. ASEAN and SAARC. ASEAN has a high-level body, ASEAN Senior Officials on the Environment (ASOEN), that could be invited to address IAS issues as they affect the sub-region
- Create a technical committee of IAS specialists to inform the Steering Committee. Three types of composition of the technical committees were considered: government experts, specialists from international organizations (e.g. GISP, CABI, SCOPE, IUCN, etc.), and both
- Engage public participation and community involvement in IAS programmes. Local communities can help identify problems on the ground, especially environmental pests
- Create a regional node for IAS activities. Participants suggested that FAO, IUCN, or a regional GISP office fulfill this role

Workshop: Austral-Pacific 2002

OVERCOMING REGIONAL CHALLENGES

Policy, coordination and legislation

- A regional IAS strategy agreed and supported at the highest level, with improved political links with French-speaking PICTs, and focus on issues best dealt with regionally
- Strengthened existing regional organizations (e.g. SPREP); coordination between existing IAS programs (e.g. Pacific Island Forum, SPREP, SPC, South Pacific Applied Geoscience Commission, FAO, NGOs)
- Effective lobbying to support Pacific issues in the right strategic fora
- Policy tools, e.g. MoUs, formally established to ensure commitments are followed through. IAS 'advocates' could be trained to deal with politicians, funders and local communities
- National strategy development involving stakeholders and IAS communities backed up by regional expertise
- New and updated legislation, together with stricter enforcement, higher penalties and application of the polluter pays principle
- Peer review process for IAS procedures, policies and programs

Actions and capacity development

- A regional Action Plan to address needs to be identified at the regional level, with successful signature projects that have a significant public outreach component
- An adaptive management approach can needed to improve understanding and reduce uncertainty. Skill sharing programs between sites are recommended (attachment training)
- Communications infrastructure (good internet access, related telecommunications services). Databases and links should be collated to identify information gaps at the regional level
- Establish strategically located nodes of technical expertise and capacity and provide countries with information on how to access training and capacity-building. Focus on parataxonomy training and development of comprehensive cost-benefit analyses
- There should be a regional roster of experts who can provide expert consultation, supported by an additional roster of expertise beyond the region where needed

Awareness-building and outreach

- Public awareness needs to be developed through regional-level programs and media. Pressure from below can improve Government accountability on IAS issues
- Regional and national activities should involve traditional leaders and provide for consultation between affected communities and the agencies that serve them

Funding

- Regional thematic approaches that could be attractive to funders include atolls, flagship species, pathways, specific IAS, and an agreed long-term regional strategy
- Funding to promote international contact through meeting attendance
- Sustainable regional funding mechanism with stakeholders whose activities lead to IAS introductions, or who use IAS commercially

PROMOTING COLLABORATION WITHIN EXISTING FRAMEWORKS

Between regional organizations

- Broader regional coordination and engagement could be developed through the Council of Regional Organizations of the Pacific (CROP), which includes the Forum Secretariat
- SPREP and SPC should hold joint meetings and collaborate regularly. They and other relevant organizations (ISSG, GISP, TNC etc.), should nominate IAS focal points and formalise a working relationship with a) each other and b) others in the region. One option may be to expand the SPREP Roundtable (which includes NGOs and other bodies) to include IAS
- Regional organizations should have formal channels of communication for IAS information

Between regional organizations and Pacific Island countries and territories

- Regional representation for the Pacific as a whole could be extended, as some islands (e.g. Hawai'i) are not currently

Elements of regional strategies to counter the invasive species threat: Priority actions identified

members of Pacific-based organizations. There is a need to explore ways for all territories and states to be represented in organizations like SPC. Hawai'i as a state in the Pacific should request SPREP for observer status

- Regional resources (e.g. information on how to eradicate IAS) must be accessible regardless of whether a Pacific island is a country or territory
- SPC and other relevant organizations could give PICTs clearer information about their respective roles with regard to IAS issues. In turn, PICTs need to inform existing institutions and programs about their respective situations and to ask how such organizations can contribute to meeting their national needs
- Communication between regional organizations on IAS issues needs to be delivered to PICTs in a coordinated fashion. Procedures should be established or strengthened for this purpose

Emergency responses

- Emergency response plans (ERPs) coordinated by SPC, and associated legal measures, need to incorporate IAS considerations
- SOPAC and other organizations (civil defence, police, coast guard, military) may introduce IAS when they respond to natural disasters and therefore should be actively involved in IAS issues
- Policy makers and higher authorities should be made aware of IAS issues so that if an invasion occurs as a result of a natural disaster, groups are poised for action. IAS guidebooks or manuals could be distributed to emergency response organizations
- A priority list of IAS threats could be established to facilitate recognition of IAS outbreaks as an emergency situation

Listing

- With regional backing, each country in the South Pacific could develop a black list of IAS. Black listing can be a gradual process, with species of concern being added after risk analysis
- A grey 'watch' list may be developed for other species of possible concern, as a softer approach to promote wide 'buy in' and avoid creating opposition
- Black and grey lists should also be established for marine IAS
- Species and major pathway lists can build on existing tools developed by IUCN-ISSG and PIER
- All listing should be done with care because of the trade implications and should be based on risk analysis

Information and communication

- Existing electronic channels for information exchange (e.g. PestNet, ALIENS-L) can be used or extended to cover IAS
- Existing publications and materials specific to IAS should be more widely publicised and new publications, newsletters
- A clearing house mechanism is needed for information on past successes and failures of IAS management and the proceedings from the ISSG conference on eradication
- A regional IAS awareness week could be organized using regional media
- More technical workshops on IAS should be held. Countries and/or organizations should have the opportunity to recommend who should be invited. Invitations to workshops should go through the proper channels and be sent to the highest level possible
- Existing regional and national IAS committees should actively engage all relevant sectors, including transportation and tourism. Fisheries stakeholders need to be involved through a marine IAS workshop
- Existing skill sharing programs should be expanded by making more funds available for travel (e.g. to observe eradication efforts in New Zealand)

EXISTING RESOURCES TO STRENGTHEN REGIONAL COLLABORATION

Existing institutional resources

Participants drew up a preliminary inventory of existing resources in the workshop proceedings, with inter-governmental organizations, NGOs, research institutes and information networks.

Funding/donor institutions

- Hold a funders' meeting after the Austral-Pacific Workshop and use workshop recommendations (i.e. Regional Statement) to support funding applications
- Build awareness among funders to ensure that the projects they fund do not inadvertently promote unwanted introductions (e.g. erosion control using IAS)
- A directory of funding agencies for the Pacific (e.g. EU) should be compiled

- The Global Environment Facility has developed an IAS project proposal: development of this funding program should also involve SPC. GEF is already funding a relevant Forest Program in Melanesia
- Several U.S. funding agencies can support IAS efforts in the Pacific. There is a need to contact these agencies, understand strategies and identify areas that they could fund consistent with their mandates. Possible sources of funding include:
 - USDA (APHIS, USDA Forest Service), which should also cover the South Pacific
 - U.S. Forest Service which has funds to cover U.S. territories
 - Fish and Wildlife Service which has an IAS strategy that extends beyond U.S. borders
 - NRCS (National Resources Conservation Service)

Private sector

- Industry groups, such as airlines, shipping and tourism, may be persuaded to contribute to IAS prevention and management in return for positive benefits (media attention, sponsorship)
- University and research institutions are both potential resources, and could also sponsor students to attend meetings, which helps to build a regional network for the future

ADDITIONAL RESOURCES NEEDED

Equipment and manpower

- Basic equipment to do the job (vehicles, petrol, other infrastructure)
- Better use of secretariat resources for relevant conventions
- Donations of new or used equipment to the Pacific by agencies, corporations and governments
- More people working on quarantine, early warning systems and other IAS issues

Information and outreach

- Regional resource directory (electronic and hardcopy) that is regularly updated, on IAS databases, videos, publications, funding sources, list-serves, technical resources, etc.
- Compendium of basic IAS reference materials (e.g. biology and taxonomy texts, toxins manuals, management information) for distribution to remote areas without internet access
- Information on sourcing basic commodities for IAS management, e.g. for chemical control
- A printed and electronic resource kit of the most unwanted IAS for the region

Funding

- Seed funding to initiate projects
- Operational funding where necessary for key institutions
- An emergency contingency fund for rapid response
- Funds for communication technology and internet access, possibly from foundations linked to Intel, Dell, etc.

WHO SHOULD BE INVOLVED?

- SPREP and SPC could take the lead to compile and circulate recommendations from this Workshop, through a focal point to be identified
- Islands in the East Pacific should also be involved (e.g. Easter Islands and the Galapagos)
- Politicians, decision makers and industry stakeholders, including retailers, pet industry, agriculture, aquaculture and fisheries
- Officers in IAS jobs should evaluate how cooperation can be carried out with their counterparts in other institutions and agencies
- Education departments should support inclusion of IAS issues in school programs and curricula
- Schools and learning centres can set up demonstration projects involving students and village communities. These initiatives can also be taken by theatres, small bag companies, the media, Rotary Clubs and Chambers of Commerce.
- Circulate existing videos (e.g. New Zealand Department of Conservation) through the region

Elements of regional strategies to counter the invasive species threat: Priority actions identified

NEXT STEPS

- Establishment of a regional IAS steering committee: SPREP and SPC should identify lines of communication on IAS issues at and between the global, regional and national levels
- Participants to report to their respective institutions on the workshop's recommendations and to present the results and recommendations to the national media, with a focus on species important in that country to maximise attention
- Participants to organise an inter-departmental meeting involving plant quarantine, environment, forestry, fisheries and other relevant agencies
- Establishment of national IAS coordinating committees and nomination of focal points

Priority actions should include:

- Organising technical training on IAS on specific issues: e.g. project-based workshop on rodent eradication, monitoring, marine IAS issues and quarantine systems
- Assessment survey of IAS
- Identify flagship IAS, using IUCN reference tools
- Pest alert for specific IAS
- Develop a database on people who are working on IAS issues in the country (scientists, educators, NGOs, private sector)
- Through the ISSG skills register, identify people who can help with needed technical skills
- Public awareness campaign on IAS with traditional leaders, private sector, theater, schools, media, religious leaders and so on

Workshop: West Africa 2004

Establish national committees and focal points

- Form national stakeholders steering committee (taking into account existing committees)
- Committees should be set up immediately
- Establish/appoint national focal points
- Focal point to coordinate steering committee

Establish a regional coordinating mechanism

- Appoint an interim facilitator (CABI) while the sub-region studies where coordination should be based

Develop a regional strategy and action plan

- Adequate funding to be provided by all countries
- Inventory of IAS in all countries
- Appoint technical team to draft action plan taking into account national plans
- Regional workshop to validate action plan
- Ratification of regional action plans by all countries
- Ratification of IPPC by all countries
- Regional training center/plans
- Establish links with international and regional bodies e.g. IPPC, GISP, ECOWAS, WTO

Promote awareness at national and regional levels

- Publicise danger posed by IAS
- CABI/GISP to assist other agencies
- Publicity by drama, video, films, sports using print and electronic media
- All publicity in English/French/Portuguese
- Target policy makers first then general public
- Identify regional/national institutions to be targeted to help promote IAS management
- Identify media appropriate to messages
- Sensitization of regional bodies
- Sensitize policy makers through special fora
- Send workshop communiqué to policy makers
- Socioeconomic/health impact studies to be used to sensitize policy makers
- Community participation

Build/strengthen national and regional capacity

- Capacity building of IAS stakeholder institutions
- Set up centers of excellence in IAS (in existing research centers)
- Training needs assessment of IAS institutions (training of trainers)
- Continued strengthening of IAS institutions capacity (human and financial resources)
- Harmonization of regional training in IAS
- Establishment of databases (IAS organisms)
- Use/exchange IAS experts in the sub region

Develop a regional legal framework

- Phytosanitary regulations
- Build from existing legal frameworks (FAO/IPPC, CILSS)
- Adopt international framework where not already done
- Harmonize existing regulations
- Ensure all states have legal framework
- Harmonize national policies
- Application and enforcement of regulations
- Conflict of interest resolution
- Establish links with international and regional bodies e.g. IPPC, GISP

Improve the knowledge base

- Research
- Collect indigenous knowledge on IAS
- Impact assessment studies (socioeconomic, biological)
- Risk assessment studies
- IAS inventories/baseline data collection

Enhance regional communication and information dissemination

- See also Appendix XXV of the workshop proceedings
- Technical team to be appointed to draft regional communication and dissemination strategy for validation
- Prepare video/films on success stories in IAS management
- Regional bulletins/newsletters on IAS
- Train specialized communicators in IAS
- Association of IAS journalists
- Set up network for dissemination/broadcasting
- Promote use of local languages to communicate at national level (radio/films/print media)
- Early warning
- Community participation

Establish a regional clearing house mechanism

- Set up database on IAS (national/regional)
- Set up regional and national websites on IAS
- Clearing house mechanism to be set up (details to be worked out later) to facilitate activities in clearing house

Mobilize increased financial resources

- All countries should provide adequate funds for IAS management
- Funds to be committed to IAS management by nations/regional/international organizations
- Enhance private sector funding
- CABI should source funding through linkages with multilateral/international organisations
- NEPAD to fund IAS management

Declarations, recommendations or conclusions from the regional IAS workshops

Workshop: Eastern Africa 1999

CONCLUSIONS

1. There are many invasive species in Eastern Africa, and there now exists in Eastern Africa considerable knowledge about invasive species. However, that knowledge is often not sufficient for management purposes. To effectively control invasive species in the region, much more information is needed about which invasive species are now in the region, where they are, their rate of spread, and the nature and fate of control efforts.
2. There must be better systems of communication about invasive species both within countries as well as among countries. These linkages should bring together land managers and researchers so that the research serves the stakeholders' needs.
3. There now exists in Eastern Africa the capacity to identify and, in some cases, control invasive species. In order to strengthen that capacity, there must be additional attention directed to conducting research on invasive species, to developing systems to monitor invasive species, and to training personnel to control invasive species. All of these require political will and funding. Better estimates of the ecological, social and economic costs of invasive species, as well as the benefits of programmes to control them, may help marshal that political will and subsequent financial support.
4. There is sufficient knowledge, enthusiasm and ideas to carry forward an invasive species initiative within Eastern Africa and the group present at the workshop forms a loose network for supporting such an effort. At the workshop EAFRINET volunteered to serve as a coordinating focal point for any group or groups that want to pursue national and or regional projects on invasive species.



Workshop: Baltic-Nordic 2001

COPENHAGEN DECLARATION

Managing Invasive Alien Species: Forging Cooperation in the Baltic-Nordic Region

The participants in the regional management workshop on invasive alien species held in Copenhagen, 21-23 May 2001 declare:

WHEREAS the Baltic/Nordic countries including the Russian Federation, recognise the existence of invasive alien species as a threat to biodiversity and;

WHEREAS these invasive alien species may have irreversible and unpredictable economic and environmental impacts and may cause diseases in humans, animals and plants and;

WHEREAS Baltic/Nordic countries intend to minimize/reduce present and future invasions of invasive species by implementing guiding principles and guidelines, such as CBD principles, ballast water management, quarantine measures, among others, based on IMO, ICES, IPPC, EPPO, Bern Convention, GISP;

WHEREAS regional cooperation and sharing of resources (scientific and technical) is necessary for effective prevention, eradication, and control of invasive alien species;

THEREFORE BE IT RECOMMENDED that a forum within existing structures for regional cooperation be established, such as a Baltic/Nordic Alien Species Task Force, to address prevention, eradication, and control (including management) of invasive alien species and;

BE IT FURTHER RECOMMENDED that a network of experts and National Focal Points be established to support the forum for regional cooperation;

BE IT FINALLY RECOMMENDED that the forum for regional cooperation through support (e.g. funding, scientific, technical) from each of the participating governments and international bodies shall develop a regional strategy to prevent and reduce the impact of IAS.



Annex 2. *cont.*

Declarations, recommendations or conclusions from the regional IAS workshops

Workshop: Mesoamerica and Caribbean 2001

CONCLUSIONS: PROBLEMS RELATED TO IAS IN MESOAMERICA AND THE CARIBBEAN

TYPES OF PROBLEMS

1. Local and regional capacity
2. Education
3. Legal aspects
4. Policies and institutions
5. Information management
6. Economic aspects
7. Research
8. Technical aspects

AREAS TO ADDRESS

- Preventing entry
- Preventing spread
- Identification of species
- Quantification of the problem
- Communication of the problem
- Identification of entry and displacement pathways
- Control and management of populations
- Eradication or suppression
- Regional cooperation in all of the above



Workshop: South America 2001

BRASILIA DECLARATION

Meeting in the city of Brasilia, Distrito Federal, Brazil from October 17 to 19 of 2001, experts representing Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela issued the following declaration:

RECOGNIZE THAT:

1. Invasive alien species, which include pests, diseases and weeds, besides causing enormous economic damage, mainly to agriculture, constitute one of the main threats to biodiversity and to natural ecosystems, in addition to risks to human health.
2. Increasing globalization, with increases in international transport, trade and tourism, and the initiation of climate changes due to the greenhouse effect and changes in land use, enhance the opportunities for the introduction and spread of IAS in the region.
3. South America harbors half of the tropical forests and more than a third of the biodiversity of the world, an immense and valuable natural asset, in large part shared by 13 countries, many of which are megadiverse: biodiversity which is the basis for sustainability of ecosystems, of forest and fisheries resources, of agriculture and the new industry of biotechnology. About 50% of Brazil's Gross National Product, for example, is derived from the direct use of biodiversity and its genetic resources.
4. The loss caused by IAS in South America's agricultural production exceeds several billion dollars annually. As an example, in Argentina the Mediterranean fruit fly costs US\$ 10 million dollars per year in control programs, plus 15-20% of production in direct loss annually, equivalent to US\$ 90 million dollars per year, and incalculable indirect economic and social impact with the reduced production and loss of export markets.
5. As they share the same continent, only separated by political boundaries, the South American countries share the same destiny in the event of introduction of IAS – it is essential, therefore, to promote greater cooperation among the region's countries to combat a common enemy.

CONCLUSIONS:

1. Despite recent progress in preventing and controlling IAS which threaten agriculture, the need is recognized for enhanced attention to the prevention and control of the impact of IAS on natural ecosystems and on the rich biodiversity of the region.
2. The importance of full implementation in the region of Decision V/8 of the 5th Conference of the Parties to the Convention on Biological Diversity is recognized, which established guiding principles for the prevention and control of IAS that threaten ecosystems, habitats or species.
3. There is a need to promote greater exchange of information, starting with the elaboration of national assessments on this problem, research, capacity building, institutional strengthening, public awareness, coordination of actions and harmonization of legislation.
4. Without prejudice to other themes identified in national assessments, the introduction of IAS in the different hydrographic basins of the region and transboundary ecosystems deserves urgent attention.
5. Better coordination and cooperation is needed between the national agricultural, forestry, fishery and environmental sectors in the treatment of this issue, including the establishment of national committees on IAS, and involving other sectors related to the issue such as health, tourism, transport and commerce, as well as the private sector.
6. It is essential, therefore, to promote greater cooperation among the countries of the region to combat a common enemy, as well as cooperate with the other countries of the Americas and with the global effort to solve a common problem led by FAO, CBD and GISP.
7. It is recognized, however, the lack of public awareness about the importance of this issue, which facilitates the accidental introduction of IAS.
8. The effective prevention and control of IAS in South America will need adequate financial and technical support.

Declarations, recommendations or conclusions from the regional IAS workshops

Workshop: Southern Africa 2002

SOUTHERN AFRICAN RECOMMENDATIONS:

Steps for Implementation of a Regional Approach to Address Invasive Alien Species

The delegates to the Southern Africa regional workshop on *Prevention and Management of Invasive Alien Species: Forging Cooperation throughout Southern Africa*, co-chaired by the Government of Zambia (Ministry of Tourism, Environment and Natural Resources) in collaboration with the Government of the United States of America, and the Global Invasive Species Programme (GISP); noting key participation by governmental and non-governmental representatives of Botswana, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, and Zimbabwe; and with representatives of the Food and Agriculture Organization (FAO), International Plant Protection Council (FAO-IPPC), the International Maritime Organization (IMO), the World Conservation Union (IUCN), and Centre for Agriculture and Biosciences International (CABI), recommend the following initial steps be taken:

Recognizing that: Invasive alien species (IAS) cause substantial economic and environmental impacts in both developed and developing countries, and that countries have varying levels of awareness of the crisis, priorities for addressing the crisis, practical experience in managing IAS, and resources to address the issues raised by IAS;

With the objective of: Promoting regional collaboration and activities with tangible outputs that will reduce the threat posed by IAS¹, each country represented at the regional workshop, *Prevention and Management of Invasive Alien Species: Forging Cooperation throughout Southern Africa*, should elect one representative who should:

Step 1: Convene a first meeting of a working group on IAS issues in their country within 2002;

Step 2: Identify national focal points, establish national working groups, together with the appointment of a GISP National Coordinator, for each country, and begin the process of establishing effective collaboration between the various national institutions with a responsibility for IAS. The working group should include representatives of all stakeholder sectors². National Coordinators should report through the CBD focal point in countries where the latter is active;

Step 3: Establish a SADC working group from representatives attending the regional workshop, *Prevention and Management of Invasive Alien Species: Forging Cooperation throughout Southern Africa* and identify a SADC focal point for IAS issues, or establish one if it does not already exist. Where possible, this should be done through the Regional Biodiversity Support Programme, attempt to link IAS issues into National Biodiversity Strategy and Action Plans (NBSAPs), and be funded initially through GISP (with support from Working for Water/IUCN/CABI), under the auspices of SADC and NEPAD;

Step 4: Through the national working groups, identify priority areas for each country and develop IAS inventories, as well as control and prevention projects through NEPAD (if possible, with GEF funding which could be linked to collateral funding available from Working for Water and other existing leverage projects, as well as with other sources of funding). The action plans should drawn up that promote collaborative be regional management of IAS and circulated among member countries so that the regional working group can set regional priorities;

Step 5: Raise awareness of the IAS issue among decision-makers, through the compilation of a report on the current and future impacts of IAS, meetings with decision-makers, brochures, the provision of a web page and other information-disseminating services on IAS for SADC countries, and, where possible, through the national focal points;

Step 6: Using pilot projects³, focus on national capacity building as the first major activity. Capacity building should be considered the key issue for immediate attention once substantial support and resources have been obtained;

Step 7: Build upon (and develop where necessary) policies, strategies, and plans for effective national prevention and control of IAS, and link these through the SADC coordinating unit on biological diversity;

Step 8: Where appropriate, appoint SADC representatives as co-chairs (2-3) of IAS regional working groups. These regional working groups should strive to mainstream IAS issues in SADC by engaging with the relevant economic sectors, i.e., trade and commerce. GISP and other partners can be approached to assist with organizing workshops;

Step 9: Develop national and regional policies (in consultation with GISP and FAO) through SADC for the creation of legislation and trade frameworks through capacity building, to lead into prevention and control projects on a regional level; and

Step 10: Develop Programs of Research and Development and Monitoring and Evaluation in the prevention and management of IAS in Southern Africa.

FOOTNOTES:

- 1 National activities are implied within this, but what is being sought is not the sum total of national activities, but rather the initiation of a regional strategy to address IAS. The implication of this is that we should seek to define key issues that can form the platform upon which a major regional process can be undertaken that will lead to a comprehensive regional strategy.
- 2 Potential representatives/sectors include: Environment; Tourism; Forestry; Agriculture; Convention on Biological Diversity (CBD); Marine Systems; Fresh Water Aquatic Systems; Academic and Research Institutions; Non-Governmental Organizations; and the private sector.
- 3 Examples of pilot projects include: *Malawi/Tanzania*: Invasive waterweeds on Shire River, Lakes Malawi and Victoria; *Mauritius*: forest restoration projects; *Seychelles*: invasive alien vertebrates; *South Africa*: Working for Water and GEF GloBallast project; *Zambia*: Pan African invasive plant prevention and management project (GEF funding available) and invasive waterweeds on the Kafue River; *Zimbabwe*: FAO project on invasive alien tree species in South Africa, Zambia, and Zimbabwe.

Workshop: South and Southeast Asia 2002

SOUTH AND SOUTHEAST ASIA RECOMMENDATIONS

The delegates¹ of the *South and Southeast Asia Regional Workshop on the Prevention and Management of IAS: Forging Cooperation throughout South and Southeast Asia*, co-hosted by the Royal Thai Government² in collaboration with the Government of the United States of America and the Global Invasive Species Programme (GISP), have concluded that problems of invasive alien species (IAS) are causing significant ecological, economic, and social damages and pose ongoing threats to all countries within the region. They, therefore, recommend that the following actions related to the prevention and management of IAS be taken:

1. Establish coordination mechanisms and information exchange systems at national, regional, and international levels by the creation of IAS National Focal Points and through the Convention on Biological Diversity's (CBD) Clearing-house Mechanism (CHM);
2. Ensure political commitment in terms of policy, legislation, enforcement, and implementation of activities to prevent and manage IAS initiated through national and regional strategies and action plans;
3. Initiate assessments of problems related to IAS and develop early warning and monitoring systems;
4. Encourage appropriate and relevant research on IAS issues;
5. Provision adequate financial and technical support from relevant national, regional, and international assistance agencies to address IAS;
6. Build capacity in terms of human resource development and technology transfer;
7. Promote community participation and involvement in efforts to address IAS;
8. Encourage partnerships between public and private sectors in activities to address IAS;
9. Promote awareness of IAS issues by convening workshops and seminars, as well as conducting publicity events and media campaigns; and
10. Ensure the sustainability of IAS prevention and management activities in the region by developing long-term programmes of action.

FOOTNOTES:

- 1 Representing Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, India, Indonesia, Laos, Malaysia, Maldives, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam, and the ASEAN Regional Centre for Biodiversity Conservation (ARCBC), CAB International (CABI), International Plant Protection Convention (IPPC) Secretariat, Food and Agriculture Organization (FAO), IUCN-World Conservation Union, South Asian Cooperative Environment Programme (SACEP), and Japan National Institute for Environmental Studies
- 2 Represented by the Office of Environmental Policy and Planning (OEPP) of the Ministry of Science, Technology and Environment, Thailand Biodiversity Centre (TBC), and National Science and Technology Development Agency (NSTDA)

Declarations, recommendations or conclusions from the regional IAS workshops

Workshop: Austral-Pacific 2002

AUSTRAL-PACIFIC REGIONAL STATEMENT ON INVASIVE ALIEN SPECIES

Our objective: "To reduce the chance of invasion of IAS to islands across the region and to control or, when feasible, rid our islands of existing invasions."

The delegates¹ of the Austral-Pacific Regional Workshop on IAS, hosted by the Bishop Museum and coordinated by the Global Invasive Species Programme (GISP), agreed to issue the following statement:

Recognizing that:

The Pacific is home to the world's island wonders with great biological as well as cultural diversity. Many Pacific islanders live subsistence or semi-subsistent lifestyles and therefore depend heavily on the natural resources surrounding them;

The Pacific is the largest ocean on the planet, with less than 2% land. It harbours 7500 islands of which around 500 are inhabited. All are fragile and many are still pristine;

Twelve percent of the Pacific's species are endemic, many are found only on a few small islands and are thus very vulnerable to the impacts of catastrophic events. The introduction of new species can have an extraordinary effect on islands and may lead to extinction(s);

IAS² are the leading cause of extinctions in the Pacific and affect the entire Pacific region. Marine IAS are probably as great a problem as terrestrial IAS;

The need for action is urgent, as we are losing the war against extinction, but islands offer unique opportunities for success in eradication and control of IAS;

Appropriate responses to IAS include prevention, early detection, rapid response, eradication, control and restoration. Prevention is the top priority as it is more cost effective than eradication or control;

There is a major need for regional cooperation and integration of efforts because of:

- the scale of the problem;
- the large number of island countries and territories;
- the rapidly changing natural barriers;
- increasing globalization;
- obligations under global agreements;
- the great number of organizations involved;
- the fact that species may become invasive for the first time after significant time lags;
- the fact that islands are more affected by IAS than their size and population would predict;
- the impact of IAS on the livelihoods (culture, economy and health) of people of the region;

and because:

- human and natural pathways now cover the region, which makes it essential that all countries and territories implement prevention and control for the mutual benefit of all;
- IAS are a crosscutting issue at international, national, regional and inter-regional levels;

Have agreed that the following actions are needed:

National

- Cooperation and effective collaboration of key government organizations and other stakeholders is important to address IAS issues effectively. IAS issues should be mainstreamed at all levels from government to communities and across all sectors.
- Key sectors include environment, agriculture (animal, plant protection and quarantine), customs and immigration, fisheries, forestry, transportation, tourism, water, public health etc, as well as civil society. National organizations from all these sectors should improve their working relationships to achieve border control objectives with regard to IAS issues.

- As a key priority, countries should implement prioritized national IAS strategies/action plans or other plans that relate to IAS (such as National Biodiversity Strategies and Action Plans). If these are not yet in place, Pacific island countries and territories (PICTs) should as a priority develop appropriate national frameworks to strategically address IAS issues. Once developed, their implementation should be a key priority.
- A further priority action is to establish national IAS Committees (i.e., with full sectoral representation) and national IAS focal points in countries that do not already have them. The Committee should supervise the implementation of the Strategies/Plans and set IAS priorities and responsibilities, such as identifying key organizations to lead on specific IAS issues in each country.
- Preventing the establishment of new IAS is the most cost-effective approach long-term and should be addressed at both the international and within country (especially between island) levels. Public awareness is the best mechanism for intercepting IAS.
- Civil society should always be engaged, informed and involved in all development of responses to IAS issues. Progress is a direct function of information exchange rate – the rate increases when the whole community understands. Measures are needed to educate and raise awareness at all levels from the school sector (including hands-on projects) to policy makers and the political level and should have community level involvement. Where appropriate, traditional leaders should be involved in decision-making processes to support IAS projects.
- To achieve mainstreaming, the importance of the issue must be made relevant to government and the greater public by, for example, conducting IAS public awareness and education campaigns focusing on key IAS impacts or a flagship species to be protected and by sharing information about economic costs and about a crisis elsewhere in the Pacific to raise awareness of prevention.
- National capacity building of professionals along IAS pathways is urgent. National technical workshops are needed as well as demonstration sites and practical training on specific prioritized IAS issues identified by individual PICTs. Individual development opportunities (e.g. participation in on- or off-shore technical courses, or in real island IAS eradication projects in other countries; work attachments) and skill sharing between countries are also greatly needed.
- Existing resources such as the GISP Toolkit ³ should be used. Innovative control techniques should be sought for and used, incorporating existing traditional knowledge and practices wherever possible.
- Each PICT should develop the skills needed in-country to conduct surveys and establish a longterm monitoring program on IAS.

Regional

- A key priority should be to build links with counterparts across the range of sectoral agencies and across regional borders. Working arrangements and communication channels on IAS should be formalised and well-coordinated among institutions with IAS roles working in the Pacific Region, particularly the Council of Regional Organizations in the Pacific (CROP) agencies such as the South Pacific Regional Environment Programme (SPREP), South Pacific Community (SPC), and South Pacific Applied Geoscience Commission (SOPAC), as well as international organizations such as The Nature Conservancy (TNC), World Wildlife Fund (WWF), the IUCN-Invasive Species Specialist Group (ISSG), the Global Invasive Species Programme (GISP), etc.
- A Regional IAS Working Group should be established for the Pacific made up of all institutions with IAS roles in the Region. SPREP should coordinate the establishment of the group and provide the Secretariat for the group, at least until the Group has its first meeting. All member institutions should nominate IAS focal points to sit on the Working Group. One of the key priorities of the Council should be to discuss and coordinate mandates and work programs on IAS in the Pacific Region.
- A more comprehensive regional IAS strategy and prioritized action plan should be developed with widest possible ownership from Pacific sector organizations, countries and other stakeholders and be prioritized on regional and local levels. Approval for the strategy and action plan should be sought from the highest possible level, the Pacific Islands Forum.
- Assistance should be made available to support PICTs in the development and implementation of national strategies.
- Mechanisms should be developed to address funding shortfalls and mechanisms based on the polluter pays principle (e.g. levies on shipping and air transport) should be considered.

Declarations, recommendations or conclusions from the regional IAS workshops

- A key priority for regional and sub-regional organizations should be to collect, share and manage information with PICT members. Development of regional centres of excellence as sources of information should be considered.
- As a priority, capacity development projects should be organized regionally to address the limited expertise and capacity of many PICTs. Many of the issues are cross-sectoral and transboundary and are most cost-effectively addressed at the regional level. There is a need for capacity development to be organized and developed regionally but delivered at national level. It should include training, individual development, skills sharing, field days demonstration sites, etc.
- Technical support activities and assistance appropriate for the region, such as regional risk analysis of pathways based on systematic analysis and research, should be undertaken and IAS invasion prediction models developed. A gap analysis should be undertaken of needs in the region to assist in setting priorities. A regional black/dirty list or list of most unwanted species should be developed and existing generic risk assessment methods assessed for potential to be built on to reflect other sectoral concerns. Relevant and specific Pacific control methods and tools for eradication, prevention, and control should be developed.
- Activities undertaken should always be accountable, transparent and subject to peer review.
- Community and communications infrastructure should be improved to enable better communication within and across the region as well as access to information sources outside the region. Databases and information sources on IAS should be coordinated. A resource guide should be available on these services, including those not accessible via Internet.
- Rapid dissemination of information is crucial. As certain parts of the Pacific have limited access to the web, an investigation is needed into the best information exchange practices to use where web-based dissemination of information is restricted. Use of existing systems should be maximised.
- Showing success and solutions is important and needed. Successful pilot projects and demonstration projects should be highlighted.
- Cost benefit analyses should be developed to justify IAS project funding requests.

Global and Inter-Regional Issues

- Progress is dependent on cooperation at the international level. Prevention or control of IAS invasions is an international problem that needs international solutions and needs a coordinated information exchange network at and between all levels.
- International agreements should be used to the best advantage for the Pacific region. PICTs and regional organizations should advocate development of stronger links between international organizations and agreements relevant to IAS prevention and management, including the Convention on Biological Diversity, Food and Agriculture Organization of the United Nations, International Plant Protection Convention, Office International des Epizooties (World Organization for Animal Health), Convention on International Trade in Endangered Species of Wild Fauna and Flora, Ramsar Convention on Wetlands and the Convention on the Conservation of Migratory Species of Wild Animals. Forum leaders and members of other relevant frameworks (e.g. Asia-Pacific Economic Cooperation, World Trade Organization) should be requested to take on IAS issues and to examine all regional trade agreements for their implications for IAS.

FOOTNOTES:

- 1 Representing the environment and agriculture/quarantine sectors of Australia, American Samoa, Cook Islands, Federated States of Micronesia, Guam, Hawaii, New Zealand, Niue, Palau, Marshall Islands, Samoa, Solomon Islands, Tokelau, Tonga, United States of America, Vanuatu, together with representatives of the SPC, SPREP, GISP, IUCN, CABI, CI, TNC, and the Gordon and Betty Moore Foundation.
- 2 This term includes terrestrial, freshwater, and marine species.
- 3 Wittenberg, R. & M.J.W. Cock. 2001. Invasive Alien Species: a Toolkit of Best Prevention and Management Practices. CAB International, Wallingford, Oxon, UK.

Workshop: West Africa 2004

RECOMMENDATIONS

We, the delegates¹ to the Regional Workshop on *Prevention and Management of Invasive Alien Species: Forging Cooperation throughout West Africa*, held in Accra Ghana, 9-11 May 2004, co-hosted by the Ministry of Environment and Science (Ghana), the World Conservation Union (IUCN) and CAB International (CABI), and funded by U.S. Department of State and the Global Invasive Species Programme (GISP);

Recognising that invasive alien species (IAS) are a major threat to biodiversity in the region and a serious constraint to regional economic development;

Considering that expanding trade, transport and tourism are increasing the frequency of invasions;

Reaffirming that an effective response to the problem of IAS requires action at community, national, regional and international levels;

Acknowledging that the countries of West Africa are Parties to the Convention on Biological Diversity and other international instruments that seek to minimize the threats posed by IAS;

Recognising that IAS cause impacts in many sectors and must therefore be tackled using a multisectoral approach;

Having discussed and considered how the problem of IAS can be addressed more effectively in West Africa through regional cooperation and collaboration;

Recommend:

1. Establishment of national steering committees and focal points

The committees should be formed immediately ensuring representation from relevant existing committees and all relevant ministries and stakeholder groups. The national focal point should coordinate the steering committee, and could serve as liaison to a regional body formed to address IAS in West Africa.

2. Establishment of a regional coordinating mechanism

A regional co-ordinating mechanism should be established under existing regional bodies. CAB International is requested to facilitate the process and provide interim regional co-ordination.

3. Development of a regional strategy and action plan

A draft regional document should be prepared by a technical team taking into account national strategies and action plans, for subsequent validation and adoption. The strategy should include links, where appropriate, with relevant international and regional instruments, bodies and organizations.

4. Promotion of awareness at national and regional levels

Policy makers and other stakeholders should be made aware of the threat posed by IAS, and of the associated economic and environmental impacts. Media and languages appropriate to the different stakeholder groups should be utilized.

5. Building/strengthening of national and regional capacity

Particular needs include: training and technology transfer; exchange of IAS experts in the sub-region; strengthening research capacity; and setting up centers of excellence based on existing capacity.

6. Development of a regional legal framework

The framework should promote regional harmonization of policy, legislation and regulations on IAS, taking into account existing legal frameworks. The framework should create an enabling environment for the application and enforcement of regulations, and for building consensus on IAS management issues.

7. Improvement of the knowledge base

Biological, ecological and socio-economic research should be undertaken on prevention and management of IAS. Emphasis should be given to baseline studies and IAS inventories, risk assessment, use of indigenous technical knowledge, and assessment of the impact of IAS and management strategies.

8. Enhancement of regional communication and information dissemination

The regional co-ordination mechanism should serve as a clearing house for information and expertise on IAS, to promote regional communication and collaboration. Emphasis should be given to early warning systems and promotion of community participation.

9. Mobilisation of increased financial resources

In response to the growing threat posed by IAS, increased funding for prevention and management is requested from governments, the private sector and development partners.

FOOTNOTE:

- 1 Representing Benin, Burkina Faso, Cameroon, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo

