The Management of Invasive Species in Marine & Coastal Environments

Module 7

Developing a National Strategic Framework
# TABLE OF CONTENTS

7 Developing a National Strategic Framework

*Objectives of the Module* ........................................................................... 3

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>Developing a National Strategy</td>
<td>4</td>
</tr>
<tr>
<td>7.1.1</td>
<td>Lead Agency</td>
<td>6</td>
</tr>
<tr>
<td>7.1.2</td>
<td>IAS Task Force and the Marine Task Group</td>
<td>8</td>
</tr>
<tr>
<td>7.1.3</td>
<td>Assessment</td>
<td>10</td>
</tr>
<tr>
<td>7.1.4</td>
<td>The National Strategy</td>
<td>13</td>
</tr>
<tr>
<td>7.2</td>
<td>Implementing a National Strategy</td>
<td>18</td>
</tr>
<tr>
<td>7.3</td>
<td>National Legal and Institutional Framework</td>
<td>20</td>
</tr>
</tbody>
</table>
Module 7. Developing a National Strategic Framework

DEVELOPING A NATIONAL STRATEGIC FRAMEWORK

Objectives of the Module:

- Outline the essential components and content of a national strategic framework for Invasive Alien Species (IAS) management, including a National Strategy, institutional structure and capacity, legislation/policy and related issues
- Describe how a national framework can be developed and implemented
- Highlight the key principles underlying the formulation, design, and implementation of a National framework

The management of IAS at the national level involves a wide variety of stakeholders. Moreover, in establishing IAS management strategies, national governments need to comply with the relevant provisions of any international and regional agreements to which they are party. In order to achieve the required integration and cooperation of the various responsible agencies, it is therefore advisable to adopt a National Strategic Framework. This framework should encompass and address IAS in terrestrial, freshwater and marine environments, outlining the general approaches, policies or strategies related to the management of any invasive species. The framework should also establish an institutional structure which would allow for appropriate coordination and organisation of the implementation of management efforts.

As national circumstances tend to differ, so will the structure of any IAS strategic frameworks. In some cases it may not be possible to develop a framework relating to IAS generally, and marine issues will be developed in the absence of such a context. There is no single recipe that will be successful in all cases, however a comprehensive national strategic framework will need to include the following elements:

- A national IAS strategy and action plan
- Operational Arrangements for the implementation of the strategy.
- Institutional arrangements and responsibilities (whose job is it? Who decides? How will agencies work together?)
- Legal / regulatory aspects

In order to deal with invasive alien species, a National Strategic Framework will need to be established.
The four elements may overlap with each other. They tend to influence each other and support each other as represented in Figure 7.1.

**Figure 7.1: Aspects of a National Strategic Framework**

### 7.1 Developing a National Strategy

A National Strategy on IAS underlies the overall national framework and represents the national commitment to action. Effective IAS management involves many stakeholders – governmental and non-governmental - operating in an interrelated and cooperative manner. The National Strategy outlines general policy and practices for all relevant parties, identifies the lead agency, and clearly articulates each stakeholder’s obligations and responsibilities.

A strategy should be developed for marine invasive species generally, and must deal with each major vector type (e.g. ballast water, mariculture). This strategy must be consistent with the general national IAS strategy, and serve as a sub-set of it, informing stakeholders in more specific areas of concern.

**Steps in Strategy Development**

1) The two main driving forces of the strategy development process are a "Lead Agency" and a "Task Force". One of the first steps is therefore, to designate a “Lead Agency”, and other key stakeholders.
(i) The *Lead Agency* is the agency with principal responsibility for the development and ongoing implementation of the National Strategy. The *Lead Agency* normally operates at the national level and interacts, as appropriate, at both regional and international levels. While that agency will most typically perform some of the tasks involved in implementing the National Strategy, it does not usually carry out all of them.

The *Lead Agency* can be an existing agency whose responsibility is increased, or it could be a new entity created for the purpose. Sometimes a coordinating entity is preferred rather than a lead agency.

(ii) The *Task Force* is a structure representing all the key stakeholders from relevant sectors, fields of interest and competencies. It should be established at the earliest possible time, so that stakeholders are actively involved in the development of the National Strategy. The *Task Force* normally acts in an advisory capacity only. At a later stage, it may continue to advise during the implementation of the National Strategy, which may involve restructuring its constituency.

2) In developing a National Strategy (whether on IAS as a whole, or just on marine and coastal invasives) it is important to carry out an initial *assessment* of the extent of the problem. This will give a better idea of the scope of work to be carried out to get effective management in place. An assessment should include a review of the biological and legal situations, including questions like:

- What are the main pathways of introduction?
- What alien species are already present, and what damage are they causing?
- What Protected Areas or endangered species are at risk?
- What industry or production is at risk?

3) The *National Strategy* itself describes the overall objective and scope, national policies, practices and operational arrangements. It should be consistent with relevant international requirements. It can advise on specific arrangements, but one of the critical functions of a National Strategy is to identify key agencies and organisations responsible for implementation of the actions required. This may include detailing how coordination and cooperation between agencies (and other entities) will be achieved and maintained.

4) *Operational Arrangements* are the processes and procedures for implementing the National Strategy and managing it on an ongoing basis, including the implementation of specific actions and recommendations identified in the Strategy. The Strategy will identify “high level action requirements” (e.g. a system of surveillance must be developed) whereas day-to-day management of IAS deals with more practical activities (e.g. carry out survey in Port A, or set traps for eradication project in Protected Area B). However, both the implementation of the National Strategy, as
well as the implementation of day-to-day management, must all be carried out under the umbrella of the overall National Strategy and/or Strategic Framework.

7.1.1 Lead Agency

One of the key steps toward developing a National Strategy is to determine the most appropriate Lead Agency. There are many closely inter-related issues that need to be considered in determining and designating the Lead Agency, the key ones being:

- The current department/agency configurations and responsibilities within the national Government. There is no single agency that is automatically best suited to be the Lead Agency – it will depend on the situation.

- It is most common and more feasible to designate an existing agency as the lead agency. However, creating a new entity is an alternative option.

- The constitutional structure in each country (e.g. is there a federal structure that needs to be reflected or is the legal system centralised?).

- The legal/regulatory aspects. (The key issue here, is that the necessary legislative powers to implement and operate the National Strategy must be available.)

- The capability and resources of existing agencies

If an existing agency is given increased responsibilities to become a lead agency, it is critical that resources available to this agency (e.g. budget) reflect this. Some countries have chosen to establish a coordinating entity rather than a lead agency.

The Lead Agency will coordinate and run the IAS Task Force, and be responsible for delegating lead authority to other agencies for heading up specialist groups, such as the Marine Task Group. The responsibility for heading the Marine Task Group may be assumed by an appropriate division of the lead agency, or it may be delegated elsewhere.
New Zealand Lead Agency for Biosecurity Strategy

In August 2003 the New Zealand Government adopted a Biosecurity Strategy. As part of the implementation of this new national strategy, it was decided that the Ministry of Agriculture and Forestry (MAF) would expand its responsibility from agricultural biosecurity concerns, to include the overall leadership of the biosecurity system.

A review was undertaken at MAF to highlight the scope of new responsibilities. New Zealand’s key agencies with IAS responsibilities were also included in developing structures and procedures to strengthen their cooperation.

The Ministry of Fisheries was delegated the responsibility for overseeing marine invasive species issues. A Marine Biosecurity section was therefore created within this ministry.

Example

There is no single entity that is the ideal Lead Agency – it will be different for different countries. The key issue is to select either the most suitable agency in the country or a "new" entity, and to establish a structure of cooperation with other agencies where roles and responsibilities are clear enabling all stakeholders to work effectively together.

Where an existing agency is given the responsibility of lead agency, it must also receive increased resources to be able to effectively deal with its increased responsibilities.
Example of Coordination Approach – National Invasive Species Council, USA

In the USA, The National Invasive Species Council (Council) is an inter-Departmental council that helps to coordinate and ensure complementary, cost-efficient and effective Federal activities regarding invasive species. The Council was established February 3, 1999 by Executive Order 13112. Council Members include the Secretaries of the Interior, Agriculture, Commerce, State, Defence, Treasury, Transportation, Health and Human Services, as well as the Administrators of the Environmental Protection Agency and the US Agency for International Development. The Council co-chairs are the Secretaries of the Interior, Agriculture and Commerce.

In January 2001, The Council released the National Invasive Species Management Plan. The Council then set up Task Teams and Subcommittees to implement the action items of the Plan.

The Council actively works with the Invasive Species Advisory Committee (ISAC). The ISAC was established to advise the federal government on the issue of invasive species and to act as representatives of the many stakeholders.

7.1.2 IAS Task Force and the Marine Task Group

Once it has been decided that a national strategy will be formulated to address IAS problems, it is necessary to decide how best to do this. There are three main options, namely: designate an agency or individual to carry out the task, hire a consultant or specialist to provide advice, or set up a Task Force, committee, or other group.

The Task Force approach has been most widely adopted because it is a more inclusive and cooperative process, bringing together the many key stakeholders in the issue and utilising their combined expertise to devise a National Strategy that best suits the country. The IAS Task Force may decide to form Task Groups focusing on special areas such as marine invasive species. The creation of a Marine Task Group is crucial to developing more detailed strategies on management of marine species. This task group will therefore inform the IAS Task Force and aid the process of National Strategy development.

It is essential that all key stakeholders in government, industry and civil society are actively involved in the issue and the development of the National Strategy. This allows them to understand the issues fully, consider how they will be affected and how they will be able to participate. They should also be able to understand the obligations they will have under the National Strategy. Involvement in the development thereof also creates a sense of ownership of the National Strategy, and thus assists in gaining their commitment to its implementation.
The IAS Task Force membership should comprise representation from all major stakeholders, especially government agencies. The Marine Task Group will be a subset of the umbrella group, and may only include those agencies and stakeholders with direct concern for, or influence on marine issues. Such groups should include, but may not be limited to the following:

1. The Lead Agency representing the IAS Task Force
2. Representatives from the equivalent of the:
   - Environmental administration including coastal management.
   - Fisheries/marine resources administration.
   - Health/quarantine administration.
   - Transport/shipping administration
   - Port and harbour authorities
   - Industry (e.g. mariculture, shipping associations, oil & gas, mining)
   - Science community/academia.
   - Environmental and other Non-governmental organisation(s), as appropriate.
   - Indigenous people(s), local community (as appropriate)

Participation in both the IAS Task Force and the Marine Task Group should be an evolving process and ensure continuity of involvement of all interested stakeholders.

The Task Force process is completed once the National Strategy is finalised (and adopted by the national government). However, it is normal to have in place an ongoing advisory group after the National Strategy is operational ("National Invasive Species Council" or similar). This group may be very similar to the original Task Force in composition and will continue to rely upon expert advice from specialist groups, such as the Marine Task Group.

---

The development/formulation of the National Strategy is usually done by a Task Force (sometimes called a National Invasive Species Committee)

It is critical that all relevant stakeholders are represented on the taskforce, including from government, industry/sectors and civil society, and that a draft Strategy is circulated widely for consultation. This allows
- maximum input of expertise
- maximum ownership of the resulting National Strategy
- maximum support for implementation

The Task Force may be informed by sub-groups such as a marine task group.
7.1.3 Assessment

Usually an important first step is to gather the information that will allow a case to be made for national commitment to action. A preliminary assessment can be made based on existing information (literature, databases, etc.). Some key information to be provided in this preliminary assessment could include:

- Inventory of existing introduced marine species in the country, and their known or potential impacts
- Information from elsewhere that will help in the consideration of potential impacts of aliens present in the country
- Threats to environment, ecosystem functions, resources, trade, health
- Human and social aspects
- Situation with regards to particularly vulnerable ecosystems, endangered species.
- Situation with regards to indigenous people(s)
- Identification of major pathways for potential future introductions of alien species (especially those known to be invasive elsewhere under similar conditions)
- Economic analysis (as possible)

It may also be useful, at this time, to take stock on the institutional and legal arrangements that are in place.

- What agencies at national, provincial or regional levels have aspects of IAS management in their mandate?
- What stakeholders have an interest in the IAS issue?
- What laws already exist pertaining to this issue?

**Constraints:** It is often a good idea to identify constraints at this stage (i.e. what are currently some of the main impediments that stand in the way of effective and efficient management of invasive marine species in your country or Region?) National workshops or other consultation where all stakeholders can participate will usually be able to provide a list of constraints and some initial ideas on how they could be addressed. This will be useful in identifying priorities during the development of the strategy.
A National Assessment of Invasives: the U.S. Office of Technology Assessment Report

In 1990, the US Congress was worried about alien zebra mussels in the Great Lakes. It turned to the Office of Technology Assessment (OTA), one of its research agencies, to determine whether zebra mussel was just the tip of the invasion iceberg. Specifically, Congress asked OTA to determine the economic and environmental impacts of all the nation’s invaders; how effective federal policies were; what role state laws played; and the relationship between invaders and genetically modified organisms. In 1993, OTA published the results of its research: *Harmful Non-Indigenous Species in the United States*, a 400-page report [14].

When the report was published, the United States had, for the first time, a national assessment that provided information regardless of taxonomic group, economic sector, and government agency. A number of its features have proven especially significant: estimates of the total number of non-indigenous species in the U.S.; their probable economic costs; a list of foreign species first detected between 1980-1993; a compilation of the responsibilities of the 20 or so relevant federal agencies; and not just detailed summaries of state fish and wildlife laws but also managers’ assessments of their adequacy.

The study was neither cheap (estimated cost $700,000) nor quick - which helped ensure its thoroughness. It laid the foundation on which subsequent, more detailed, work has built. Many call it "the Bible" on U.S. invaders.

---

*Case study Prepared by Phyllis Windle, Senior Scientist, Union of Concerned Scientists, Washington, DC, USA, who directed the OTA study, for [1] The report can be located by date and title after selecting "OTA Publications" on the Internet at: [http://www.wws.princeton.edu/~ota/index.html](http://www.wws.princeton.edu/~ota/index.html)*
Module 7. Developing a National Strategic Framework

In order to develop a National Strategy you need to know what the present situation is. A useful starting point is an assessment of:

- What alien species and IAS are there?
- What potential IAS are likely to arrive, and through what pathways?
- What are the threats to resources, biodiversity and health?
- What agencies / entities are dealing with what aspects of IAS?
- What laws, regulations and policies exist?
- What constraints have stakeholders identified?

Constraints faced by European countries

The European Strategy on Invasive Alien Species mentions as "challenges and opportunities" the following constraints, faced by many European countries:

- low public awareness and opposition to government intervention;
- shortage and inaccessibility of scientific information (for species identification, risk analysis, detection and mitigation techniques etc.);
- absence of clear and agreed priorities for action;
- ease of introduction and movement (e.g. through the post), inadequate inspection and quarantine;
- inadequate monitoring capacity;
- lack of effective emergency response measures;
- outdated or inadequate legislation;
- poor coordination between government agencies, countries and other stakeholders.

The Strategy states that it aims to address these constraints. The Strategy recognises that Parties’ existing legal obligations may constrain or influence the measures which can be taken, particularly with regard to regulation of trade-related activities.
7.1.4 The National Strategy

The National Strategy is a leadership statement and ‘blueprint’ for dealing with IAS Issues.

The National Strategy is normally designed and compiled by the Task Force, but some of the work for this may be delegated to a specific agency (most likely the Lead Agency) or a consultant. Regardless of the approach taken, it is important that there is wide stakeholder participation in the development of the National Strategy. This strategy may be referred to as the "National Invasive Species Strategy" or "Biosecurity Strategy".

A National IAS Strategy is not meant to provide detailed action plans, but it is meant to move the country closer towards dealing with IAS in an overall framework. Such activities identified will be of a "high level" nature, (e.g. "legislation does not presently cover risk assessment for mariculture species – it is recommended that this be addressed by 2006").

- Integrating IAS strategies into other national strategic issues

IAS issues should be mainstreamed (integrated) into many other issues, given the pervasive nature of IAS, and the fact that NOT dealing with IAS will impede many other desired outcomes. For instance, ecological restoration or development of sustainable mariculture practices are unlikely to succeed in the long-term unless IAS introductions are prevented and existing invasions are controlled. For instance, the need for management of IAS was recognised as an emerging issue in Protected Areas Management at the IUCN World Parks Congress (Durban, South Africa, September 2003). Addressing IAS issues should become part of programmes and activities dealing with a variety of other issues at strategic as well as operational levels.

IAS management should be treated as a cross-sectoral issue, and strategically incorporated in management plans related to the following:

- Agriculture
- Forestry
- Fisheries
- Transport
- Health
At a higher level, integration of IAS issues may include the following areas:

- Development of biodiversity strategies
- Poverty alleviation strategies
- Sustainable development strategies
- Environmental impact assessment for large engineering works that could allow movement across biogeographical boundaries (e.g. canals, bays)
- Protected Areas Management Plans
- Coastal zone management

**Precaution**

Precautionary measures are advocated, required or allowed by several international instruments, including the Convention on Biological Diversity, the Biosafety Protocol, the World Trade Organization SPS Agreement, and the Food and Agriculture Organization’s Code of Conduct on Responsible Fisheries. The preamble of the CBD states the precautionary principle as: lack of full scientific certainty shall not be used as a reason to postpone measures to avoid or minimise a threat of significant reduction or loss of biodiversity.

The Precautionary Principle is particularly relevant to IAS issues because of the inherent scientific uncertainty and limitations on predictive capacity. This is especially acute when trying to predict invasiveness and impacts on biodiversity. The ecological complexity of possible effects on biodiversity (and its flow-on to ecosystem services etc.) is one of the challenges that must be faced by a national strategic framework to deal with IAS.
Vision, goals / objectives

"Dealing with IAS issues requires a collective vision, decided by core stakeholders. This vision must underlie long-term strategies undertaken at regional, national and local levels."

Conclusion from participants at IAS session at the 2002 Pacific Region Global Biodiversity Forum (Rarotonga, Cook Islands)

A first step should be to establish a vision for the National Strategy, as well as an overall objective. In other words, what is the ultimate outcome that you are aiming for? It is important that this is well understood and supported by stakeholders, so that they will be likely to support the actions, regulations and laws that are required and are likely to want to comply and assist.

Scope

The strategy must set out a clear statement of what it is trying to cover.

- What types of species and pathways are included (e.g. does it cover terrestrial AND marine?
- Does it cover IAS mandates of CBD as well as those covered by, for instance, IPPC, OIE? What geographical area is included?

Ideally, a national strategic framework should be applicable to all taxa, pathways, habitat types and all national mandates that stem from international instruments relevant to IAS. However, in reality, the overall picture may have to be built up over time and the scope of what can be developed will be determined by the national situation and priorities.

In the absence of an over-arching IAS Strategy, a strategy on marine invasive species may be developed, with a view to incorporating it into a more comprehensive strategy at a later stage. In any case, a National Strategy should remain a relatively flexible document. Regular reviewing and updating/amending should be an integral part of any National Strategy.
Scope of the European IAS Strategy:

"Terrestrial, freshwater and marine environments under the sovereignty or jurisdiction of Bern Convention Parties. It also provides guidance for activities carried out in areas beyond national jurisdiction (e.g. shipping);

Alien species (as defined by the Conference of the Parties to the Convention on Biological Diversity) in all taxonomic groups, including viruses, prions, bacteria, feral animals of domestic species (cats, dogs, goats, etc.) and alien biological control agents. It does not apply to genetically modified organisms”

Context

The development of a National Strategy needs to take into account national, regional and international frameworks. This will be especially relevant where IAS management intersects with trade. Existing sectoral procedures or strategies should be taken into account.

The IAS strategy must also be integrated with other national commitments (e.g. to sustainable development and biodiversity conservation). IAS prevention and management issues are a cross cutting issue, and should be included in as broad a context as possible. Components of the IAS Strategy related to marine invasive species issues should be developed as part of integrated coastal management strategies and programmes.

Components / Content of National Strategy

Procedures, systems and actions contained within the Strategy should address all aspects of IAS management, including prevention, surveys, response mechanisms, awareness, research, etc. Specific national circumstances must be accommodated, however the following components for a national IAS strategy should be included:

- Status and trends of IAS in the country: identification of priorities
- Main sectors (e.g. type of industry) pathways, vectors and particular risks,
- Identify government departments / agencies at all levels (e.g. including regional) that have a mandate relating to IAS, and their roles and responsibilities under the strategy
- Procedure/system for cooperation within and between relevant agencies (and sectors and institutions as appropriate)
- Procedures/system for stakeholder participation
• Relevant legislation and regulations as well as proposals for addressing gaps that were identified in the review stage
• Outline of criteria for risk analysis, management planning and mitigation
• Requirements related to monitoring,
• Requirements / systems for training and capacity building
• Where appropriate, specific measures or policies for isolated and biodiversity-rich ecosystems (e.g. islands and archipelagos, protected areas)
• Requirements for recovery of species/ecosystems affected by IAS and ways to promote use of native species
• Requirements for public awareness efforts
• Research requirements
• Funding issues

Example

The components in the US National Invasive Species Strategy are reflected in the chapters of its strategy document:

Introduction
Survey of Federal Roles and Responsibilities
An Action Plan for the Nation
   A. Leadership and Coordination
   B. Prevention
   C. Early Detection and Rapid Response
   D. Control and Management
   E. Restoration
   F. International Cooperation
   G. Research
   H. Information Management
   I. Education and Public Awareness
   J. Conclusion

Module 7. Developing a National Strategic Framework

7.2 Implementing a National Strategy

Implementation of the national framework for addressing IAS issues will involve implementation of the National IAS Strategy and other "high level strategic" planning as well as ongoing day-to-day activities. Some of these have been addressed in other Modules already. Implementation of some higher-level strategic actions may include:

- The integration of IAS management within national and sub-national priorities
- The requirements for leadership and coordination of national efforts
- The cooperation of agencies and stakeholders, and the need to involve stakeholders widely
- Requirements of legal and institutional frameworks

As part of the implementation, further assessments and reviews may be carried out, and more detailed national plans may be developed for a subset of IAS issues, as deemed necessary given the national priorities. While they will have strategic elements, they will usually have more detailed operational components. National plans of this sort can be developed for various aspects of marine invasive species management (e.g. Australian Ballast Water Plan). This illustrates that there is not one exact way to go about building specific components of a national framework but that different national circumstances may dictate different approaches.

Implementation of a National Strategic Framework will consist of implementing high level recommendations for action (e.g. from National Strategy) as well as the planning and carrying out of day to day activities to address IAS issues.
National Strategy for ballast water developed by Australia (1990)

Australia, through the Australian Quarantine and Inspection Service (AQIS), the lead Commonwealth agency responsible for ballast water issues (the Lead Agency), became one of the first countries to introduce Ballast Water Management Guidelines for Shipping.

A group (Task Force) comprising representatives of the organizations listed below prepared a draft National Strategy which was then approved by the national Government and publicly launched in 1998. This group of organizations subsequently comprised the Australian Ballast Water Management Advisory Council (ABWMAC and consists of representatives of key stakeholder organizations and individuals identified by the Minister as able to provide advice in relation to ballast water management issues, including:

- An independent Chairperson (appointed by the Minister)
- AQIS
- Australian Ship owners Association (ASA)
- Australian Chamber of Shipping (ACOS)
- Bulk exporters representative (e.g. Minerals Council of Australia (MCA))
- Association of Australian Ports and Marine Industries (AAPMA)
- Australian Seafood Industry Council (ASIC)
- Australian Aquaculture Association (AAA)
- Centre for Research into Introduced Marine Pests (CRIMP)
- Australian Maritime Safety Authority (AMSAR)
- Environment Australia
- Department of Transport
- A conservation representative
- State/Territory representatives


General principles to be maintained through any approaches to implementing a National Strategy include:

- **Flexibility**
- **Leadership and coordination**
- **Interagency Cooperation**
- **Wide stakeholder involvement**
- Leadership, Coordination and Cooperation are key building blocks for a National Strategic Framework.
- It will depend on the country’s situation which Agency may be the best suited to be a Lead Agency.
- National IAS Committees could be a good first step towards a Strategic Framework
- Interagency Cooperation will require goodwill and understanding of the common goals
- Wide stakeholder involvement is critical for the success of a Strategic Framework

7.3 National Legal & Institutional Framework

In the national context, law is used to implement policy objectives and determine principles, standards and procedures to achieve them. It sets rules for the conduct of human activities and allocates rights and responsibilities amongst the actors concerned. It may be designed not only to prohibit or restrict actions but also to promote desired goals through provision of economic and other incentives. It is important to understand how legal and institutional systems underpin the mandate to act to address IAS – without such underlying framework, it may not be possible to address IAS effectively (e.g. a government agency may be in a situation where they have a mandate to carry out risk assessments for plant species, but not other potentially invasive taxa, or emergency response may be ineffective because personnel are not able to get access to certain properties, etc.)

Another important function of national legislation is to establish the institutional mechanisms needed to develop appropriate implementing regulations, including standards and criteria as appropriate, compliance monitoring systems, promote policies for improved implementation and any necessary legislative changes. Institutions are therefore key to overseeing implementation and compliance, as well as to generate needed reforms.
The successful 1999 eradication of the black striped mussel from a Darwin marina depended on the Australian Northern Territory government being able to declare the infected marina a restricted area only two days after being advised of the problem. Most Australian States did not have similar legislation to the Northern Territory and could not have taken such measures. [21]

- Law is used to implement policy objectives and determine principles, standards and procedures to achieve them
- Legal and institutional systems underpin the mandate to act to address IAS
- Establishing efficient institutions is one of the most important roles of legislation, though this is often underestimated

**Common Weaknesses of Existing National Law and Institutions**

National law has historically developed separately within the various sectors. In most countries, alien-related provisions are distributed across nature conservation, agro-forestry, fisheries, water resources, and quarantine legislation, and more recently, in instruments dealing with the control of genetically modified organisms. Relevant provisions may also be found in hunting, fishing and wildlife regulations that address the introduction or release of species for purposes of restocking. The reasons for this sectoral tradition are usually historical or administrative rather than scientific or technical.

Common problems with national legislation relating to IAS include:

- Fragmented legal and institutional frameworks
  - Absence of a strategic approach to the problem, with alien-related issues ignored or under-represented in national environmental or biodiversity planning processes;
  - Fragmentation of, and inconsistencies between, existing provisions
  - Absence of institutional coordination / cooperation between government agencies
• Weaknesses related to coverage and terminology
  - Gaps in taxonomy: frameworks do not specify whether they go beyond the species or sub-species level.
  - Gaps in scope of regulatory frameworks: common omissions relate to alien plants, fish, micro-organisms and to marine and coastal ecosystems;
  - Narrow or inconsistent objectives, often linked to protecting economic interests rather than native biodiversity in its own right;
  - Non-existent or inconsistent definitions of key terms.
  - Legislated protection of biodiversity may inadvertently protect alien species.

• Problems related to compliance, enforcement and remedies
  - Absence of legal measures to address pathways for unintentional introductions;
  - Risk assessment and permit procedures cumbersome and costly;
  - Absence of legally-backed requirements for monitoring;
  - Powers and duties for eradication, containment and control weak or nonexistent; crisis management approach towards invasions;
  - Lack of funding to support legislated response actions
  - Conventional criminal and civil law procedures are difficult to apply in the aliens context – resulting in difficulties of enforcement

• **Key Requirements for National Legal frameworks**

In moving beyond a piece-meal approach to alien species control, decision-makers need to consider carefully the purpose and scope of the policies and laws they adopt.

Explicit objectives are necessary to provide a conceptual framework to develop the legislation itself, guide implementation, set priorities and build awareness. Objectives of the legal framework will be the same as those for the overall IAS national framework. Some key concepts are given below that are especially relevant in the development and implementation of an overall national framework for dealing with IAS.

**Definitions and use of terminology**

Ideally, definitions should be used consistently in all relevant sectoral instruments but this is often not realistic. Terminology, in the international context as well as the national context, developed independently in different sectors. In view of this, and of the different mandates of the different sectors it is no surprise that definitions and terminology vary widely between countries and even between sectors within one country (e.g. agriculture, conservation). Those implementing the national instruments should be aware of these differences. Legislation should clearly define its terminology.
Examples of a key difference: in the CBD context, and in the IPPC context:

"Introduction" is defined differently – this is due to the fact that IPPC has defined terminology in relation to jurisdictional (political) boundaries, while the CBD's mandate resulted in a definition based on ecological boundaries.

In Conservation/environmental context the term "endemic" has a markedly different meaning from the same term in an "agricultural" context (e.g. OIE). For instance, compare the sentence "the kiwi is one of New Zealand's best known endemic birds" and the sentence "Foot and Mouth disease must now be considered endemic in country X"

**Geographic coverage**

Extensive parts of national or regional territories may be affected if an invasion takes hold. Legal frameworks should provide a basis for regulating introductions of alien species to any type of ecosystem (terrestrial, freshwater, marine, etc.) and for monitoring and managing their use wherever this takes place.

**Management**

All aspects of management including prevention, early detection and rapid response eradication and control should be supported by institutional and legal arrangements that provide clear mandates and responsibilities. Details have been provided in the training Modules that specifically deal with management, but the following are worth noting here:

**Prevention**

Especially when considering prevention, it must be kept in mind that because alien species move through international transport and trade pathways, national measures to prevent or minimise risk of unwanted introductions have implications for the multilateral trading system. The World Trade Organisation, primarily through the Agreement on the Application of Sanitary and Phytosanitary Measures, sets out binding principles and rules and recognises sources of international standards that should, where available, be followed in national measures. Where no international standard exists or a higher protection level is sought, the State concerned must justify a national measure as it affects international trade through scientifically based risk assessment.

**Eradication and control**

Eradication and control measures usually involve killing members of the invasive target species or, through chemical or other means, such as sterilising them to prevent future reproduction. For this to be lawful, IAS need to have a legal status compatible with such
actions and the relevant agent or individual must be authorised to undertake such measures as may be necessary to eradicate or control the species concerned.

In some countries, this is currently not possible or only in a limited way, e.g. eradication is allowed under certain circumstances, usually related to agricultural damage, but NOT to ecological damage. Alien species that have become invasive may in fact even be legally protected. This happens where the law gives protection to biodiversity as a whole without making any distinction between alien and native species, or where it gives "blanket protection" to a higher taxon (genus, family, order or class) that includes an alien species.

To get round this problem, biodiversity/nature conservation legislation must use terminology that excludes alien species from legal protection but retains automatic protection for reintroduced native species, future newly-described native species and species that naturally only occur occasionally on the relevant territory (e.g. if the country is on their migration route).

Legislation must exclude alien species from automatic protection.

Rapid response

A legal mandate for emergency (rapid response) measures should provide for inspections, confiscation, disinfection of equipment, activity-based restrictions, closure of contaminated areas to navigation or traffic, a ban on anchorage and provision of alternative buoys or moorings. Special measures should also be available to respond to threats to legally protected areas and other areas of ecological importance.

Control

Longer-term control measures should include powers for competent authorities to:

- Regulate possession and domestic translocation of and trade in alien species;
- Restrict subsequent releases of alien animals and plants to the wild, whether intentionally or through negligence;
- Require land owners/occupiers to notify the relevant authority of the presence of listed alien species on their land and, where required by law, to take specified management measures;
- Take eradication and control measures and, where appropriate, to develop area-based pest management strategies in consultation with all affected stakeholders;

Where proposed biological control agents are alien species, the full process of risk analysis should apply to them, as for any other proposed intentional introduction of an alien species.