

**A COMPARATIVE STUDY ON MARINE PROTECTED AREAS BETWEEN
AUSTRALIA AND TANZANIA**

By

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DISCLAIMER

The views expressed herein are those of the author and do not necessarily reflect the views of the Government of Tanzania, the United Nations, the Nippon Foundation of Japan, James Cook University or International Ocean Institute.

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ACRONYMS

CALM - Western Australia Department of Conservation and Land Management

CBD - Convention on Biological Diversity

EAME – East Africa Marine Ecoregion

EBM - Ecosystem-based management

EEZ - Exclusive Economic Zone

EPBC - Environment Protection and Biodiversity Conservation Act

ESD - Ecologically sustainable development

GBRMPA - Great Barrier Reef Marine Parks Authority

IGAE - InterGovernmental Agreement on the Environment

IMCRA - Interim Marine and Coastal Regionalization for Australia

IUCN - International Union for the Conservation of Nature

JPOI- Johannesburg Plan of Implementation

LOSC - Law of the Sea Convention

MPAs - Marine Protected Areas

MPRU - Marine Parks and Reserve Unit

NRSMPA - National Representative System of Marine Protected Areas

QPWS - Queensland Parks and Wildlife Services

UNCED - United Nations Conference on Environment and Development

WPC - World Parks Congress

WSSD - World Summit for Sustainable Development

WWF – World Wide Fund for Nature

ABSTRACT

Tanzania has a number of marine protected areas (MPAs), as a coastal nation has to establish a network of marine protected areas for achieving comprehensive marine conservation. Over the past few decades, Australia has emerged as an international leader in marine conservation, launching and implementing a series of national ocean policy and marine protected areas initiatives relevant to marine protection. This paper analyses Australia's marine protected areas policy so as to extract lessons or successes which may be applied to improve MPAs in Tanzania. Chapter one gives the introduction of marine environments and outlines some conventional international law provisions containing general and specific obligations to protect and preserve the marine environment. Chapter Two defines marine protected areas and discusses their benefits. The third Chapter analyses Australia's Oceans Policy, in particular its establishment and implementation. Chapter Four explains the status of MPAs in Australia and the development of a National Representative System of Marine Protected Areas (NRSMPA). Chapter Five and Six discuss the current situation with respect to MPAs in Tanzania and make some comparisons between Australia and Tanzania MPAs policies, legislation, institutional arrangements and integrated coastal zone initiatives. Further more, some lessons learned from Australia are highlighted for consideration to improve MPAs in Tanzania. The paper concludes that Tanzania should put more emphasis in the establishment of new protected areas and improve the management, conservation and protection of the existing ones. It recommends for the development of a national ocean policy to have an effective, efficient and coherent ocean management.

1. INTRODUCTION

The marine Environment is an integral part of the natural and cultural heritage of the world with its vital diversity of marine and estuarine animals, plants and communities, which are critical components of self sustaining systems of local, national, regional and international significance¹.

While there are already areas that have become seriously degraded by the direct or indirect effects of human activities and the rate of degradation is increasing rapidly², it is important that the development of marine protected areas must give consideration for the continued welfare of people who have customarily used these areas.

In addition to human activities, marine Environments are also threatened by other causes. The report of the United Nations Secretary-General on oceans and law of the sea (March 2005) noted that:

Our oceans and seas are threatened by climate change, natural disasters, Environmental degradation, depletion of fisheries, loss of biodiversity and ineffective flag state control³.

As international Environmental issues ascended the political agenda in the late twentieth century, global and regional political fora began to address the issue of Environmental protection and applicable legal regimes. These deliberations generated a range of soft law principles and conventional international law provisions containing general and specific obligations to protect and preserve the marine Environment⁴.

Examples of conventional international law provisions which contain general and specific obligations to protect and preserve the marine Environment include: the International

¹ Kenchington, R.A 1990. Managing Marine Environment Taylor and Francis Ney York Inc. pp 221.

² Agardy,T 1997. Marine Protected Areas and Ocean Conservation. Academic Press, pp 244.

³ See United Nations Secretary-General ‘‘Oceans and the law of the Sea: Report of the Secretary General’’ (4 March 2005) UN. Doc. A/60/63, par. 319, online:
<<http://daccessdds.un.org/doc/UNDOC/GEN/NO5/257/59/PDF/NO525759.pdf?>> (Accessed: 15 June 2006)

⁴ Global conventions on protection of marine Environment online:
< <http://www.offshore-Environment.com/conventions.html>> (Accessed: 18 June 2006)

Convention for the Regulation of Whaling 1946; International Convention for the Prevention of Pollution from ships 1973, as modified by the protocol of 1978 relating thereto (MARPOL 73/78); United Nation Convention on the Law of the Sea 1982; and Convention on Biological Diversity 1992. Soft law instruments include the International Union for the Conservation of Nature and Natural Resources (IUCN) Principles and International Maritime Organization Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Sea Areas.

States have implemented these instruments at the national level using a wide variety of tools including the establishment of marine protected areas. There are also regional examples of marine protected areas within adjacent national jurisdictions that are supported by specific multilateral conventions and action plans⁵.

Examples of regional conventions which provide for the creation of marine protected areas in sea areas within national jurisdiction include the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean⁶, the Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region⁷, Protocol Concerning Protected Areas to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region⁸ and the Protocol Concerning Specially Protected Areas to the Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific⁹.

⁵ Regional Conventions regulating Environmental impact of the offshore oil and gas development and protecting the marine Environment online:

<<http://www.offshore-environment.com/regionalconventions.html>> (Accessed 18 June 2006)

⁶ Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean (Barcelona, 1995) online:

<http://www.unep.ch/regionalseas/regions/med/t_barcel.htm> (Accessed 18 June 2006)

⁷ Convention for the protection, management and development of the marine and coastal Environment of the Eastern Africa Region, Nairobi 1985.

⁸ Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region Cartagena de Indias, 24 March 1983 online:

<<http://www.cep.unep.org/pubs/legislation/cartxt.html>> (Accessed 18 June 2006)

⁹ Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific (Lima 1981) online:

< <http://eelink.net/~asilwildlife/SoutheastPac.html>> (Accessed 18 June 2006)

2. MARINE PROTECTED AREAS A KEY MEANS OF CONSERVING THE MARINE ENVIRONMENT

2.1 Definition and benefits of Marine Protected Areas

A marine protected area is an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, managed through legal or other effective means.¹⁰ This definition was developed by the 4th World Wilderness Conference in 1987 and adopted by the International Union for the Conservation of Nature (IUCN) at its 17th General Assembly in 1988. The World Wide Fund for Nature (WWF) uses the term marine protected areas as an overarching description of an area designated to protect marine ecosystems, processes, habitats and species which can contribute to the restoration and replenishment of resources for social, economic and cultural enrichment.

Over the years, increasing pressure has been placed on the marine Environment. The development in technology has brought about an increase in the range of use of marine resources and access to marine Environments. For example, the development of large-scale fishing industries, tourism, aquaculture and the development of new forms of drugs from marine biodiversity has led to exploitation of marine resources and destruction of the marine Environment¹¹.

Unless the marine Environment is managed in a sustainable manner, the uses and users of marine ecosystems can threaten, change and destroy the very processes and resources that they depend on. The obvious effect is seen in the impacts of the exploitation of marine resources for food. Furthermore, marine biodiversity, ecosystems and resources are also threatened by impacts from the land, through pollution by nutrients, chemicals and silt, and through changed river flows¹².

¹⁰ Kelleher, G. and Kenchington, R. (1992): Guidelines for Establishing Marine Protected Areas. Marine conservation and Development Report IUCN, Gland, Switzerland vii page 14.

¹¹ National Research Council 1994: Restoring and protecting marine habitat: Role of Engineering and Technology pp 193.

¹² Commonwealth of Australia 1997: Inquiry into Marine and Coastal Pollution: Report from the Senate Environment, Recreation, Communication and the Arts References Committee pp 199.

Effectively managed Marine protected areas can maintain ecosystem structure and functions, protect habitats and species, and enable sustainable use of resources. Though the benefits of protected areas are now well accepted, today less than one percent of the entire oceans' surface is declared as protected, and only a small portion of this is effectively managed. Marine protected areas are recognized as an important tool to help conserve marine biodiversity by protecting habitats and ecosystems. They are an important component of local, national and international biodiversity conservation and sustainable development policies and provide a range of benefits such as:

- **Conservation of biodiversity and ecosystems:** Marine protected areas protect entire habitats and their full range of animals and plants, preserving genetic diversity, age structures and the delicate balance among all the living component of an ecosystem¹³. Well-managed MPAs typically result in significant and long-lasting increase in population size, number of species, and reproductive output of marine animals and plants¹⁴. MPAs can provide reservoirs of genetic material for the natural or assisted recovery of areas affected by pollution, by over-fishing or natural causes.
- **Protection of rare or threatened species and communities:** MPAs are carefully selected areas of high biodiversity where human development, exploitation and other destructive activities are limited in order to preserve endangered species and replenish threatened commercial fishing stocks, thus MPAs are effective in conserving habitat and supporting the recovery of exploited species.
- **Potential contribution to ecosystem-based management of fisheries:** MPA is a high profile and well-documented tool for protecting marine ecosystems and for managing marine fisheries¹⁵. There is a growing body of evidence around the world on the importance of MPAs in maintaining or enhancing fisheries, three

¹³ National Research Council, Marine Protected Areas: Tools for sustaining Ocean Ecosystems, xi (Academy Press, 2001) [hereinafter MPAs: Tools for sustaining Ocean Ecosystems].

¹⁴ Ray, G. C and McCormick, M. G 1994 Coastal-Marine Protected Areas A Moving Target, in D. J. Brunckhorst (ed) Marine Protected Areas and Biosphere Reserves: Towards a New Paradigm. Proceeding of the 1st International Workshop on Marine and Coastal Protected Areas.

¹⁵ Bergen, L.K and Carr, M.H. Establishing Marine Reserves: How Can Science Best Inform Policy?, Environment, Mar. 2003, at 10-11.

basic benefits of MPAs to fisheries can be considered: (i) They support stock management including the protection of specific life stages (such as nursery grounds), protection of critical functions (feeding grounds, spawning grounds), provision of spillover of an exploited species, and provision of dispersion centers for supply of larvae to a fishery; (ii) They improve social-economic outcome for local communities, as MPAs benefit local fisheries by protecting fish from unsustainable harvesting during spawning and vulnerable life stages¹⁶. Fishermen benefit when mature fish swim from protected areas into fishing grounds ('spillover')¹⁷ and by the movement of eggs, larvae and juvenile fishes out of protected areas ('export'); and (iii) They support in improving the catch in nearby fisheries creating larger catches with increased body size and reducing the year to year variability in catches.

However, along with this benefit there are some impacts on fisheries especially on local and commercial fishing, which often do continue in MPAs but with some significant restrictions on fisheries activities. Examples of the impacts on fishing activities are reduced allowable catches per area and restricted fishing days per area. If this is effectively implemented it will affect social and economic benefits of fisheries for local fisheries and commercial fishing in the given area.

- **Contribute to sustainable tourism:** Well-managed marine protected areas are often major tourist attractions therefore the establishment of marine protected area is an excellent way to raise the profile of an area for marine tourism and to broaden the local economic options. MPAs attract divers and other eco-tourists, thereby helping to establish sustainable alternative sources of income for local communities and building grass roots support for conservation programs.

¹⁶ Gubbay, S. 1995: Marine Protected Areas: Principles and Techniques for Management pp 232.

¹⁷ National Research Council, Marine Protected Areas: Tools for sustaining Ocean Ecosystems, xi (Academy Press 2001).

- **Conservation of scientific reference sites**

MPAs containing undisturbed marine biodiversity and ecosystems are particularly important in the search for effective methods to mitigate damage and restore destroyed ecosystems. They serve as reference sites for restoration and improving performance. Without biodiversity reference areas and benchmarks it is difficult to study and assess the outcomes of restoration attempts or improve past performance.

- **Conservation of cultural heritage:** MPAs have a major role in educating local communities and visitors about the culture, history and heritage of the areas they protect¹⁸. In most coastal areas, there is a history of use, culture and values associated with specific localities in marine Environment. There are often links to prehistoric use and legend, and traditional practices of use that are important in the understanding of present values and future options.

- **Education opportunities:** Successful MPAs serve as models of integrated, participatory design and management that can be applied to other conservation projects. The skills and experience acquired by participants, including local residents, can also be transferred to meet other conservation and Environmental challenges.

2.2 Global Support for Marine Protected Areas

At the global level, the establishment of marine protected areas both within and beyond national jurisdiction has been addressed by various organizations such as the United Nations, International Union for the Conservation of Nature and Natural Resources (IUCN) and the Worldwide Fund for Nature (WWF).

¹⁸ Crosby, M.P 1994. A proposed approach for studying Ecological and Socio-economic Impacts of Alternative Access Management Strategies for Marine Protected Areas..., in D. J. Brunckhorst (ed) Marine Protected Areas and Biosphere Reserves: Towards a New Paradigm. Proceeding of the 1st International Workshop on Marine and Coastal Protected Areas.

The United Nations

The support for creating marine protected areas can be inferred from a number of articles in the United Nations Law of the Sea Convention¹⁹. Article 192 of the LOSC provides that “States have the obligation to protect and preserve the marine Environment”. Other articles of the LOSC lend support to the creation of marine protected areas beyond national jurisdiction for specific purposes such as conservation and management of living resources in Article 61, exploration of the continental shelf and management of its resources in Article 77, the assessment and monitoring of Environment impacts in Article 204 and the protection of archaeological and historical objects in Article 303(1).

Article 194 elaborates on this general obligation and provides that

States shall take, individually or jointly as appropriate, all measures consistent with this convention, that are necessary to prevent, reduce and control pollution of the marine Environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and they shall endeavour to harmonize their policies in this connection.

Measures to be taken include those necessary to protect “rare and fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life” under Article 194(5) and in Article 196(1) measures to prevent reduce and control pollution of the marine Environment resulting from the use of technologies under States Parties jurisdiction or control or the introduction of alien or new species to a particular part of the marine Environment, which may cause significant harm to that part of the Environment.

The need for pollution prevention measures to be consistent with other ocean uses permitted under the LOSC is reinforced in Article 194(4) which provides:

¹⁹ United Nations Convention on the Law of the Sea 1982.

In taking measures to prevent, reduce or control pollution of the marine Environment, States shall refrain from unjustifiable interference with activities carried out by other States in the exercise of their rights and in pursuance of their duties in conformity with this Convention.

The global and regional cooperation necessary to fulfil States Parties obligations under Part XII of the LOSC is recognized in Article 197 of the LOSC which provides:

States shall cooperate on a global basis, direct or through competent international organizations, in formulating and elaborating international rules, standard and recommended practices and procedures consistent with this convention, for the protection and preservation of the marine Environment, taking into account characteristic regional features.

United Nations Conference on Environment and Development (UNCED) - Agenda 21

The general obligation of States to protect and preserve the marine Environment, codified in Article 192 of the UNCLOS was further developed in Chapter 17 of the Report of United Nations Conference on Environment and Development (Agenda 21)²⁰.

Agenda 21 asserts that protection and sustainable development of the marine and coastal Environment and its resources requires new approaches to management and development that are “integrated in content and are precautionary and anticipatory in ambit”. Chapter 17 list seven program areas requiring action:

- Program area A: Integrated management and sustainable development of coastal areas, including exclusive economic zone.

To address the impact of coastal zone activities on the health of oceans, Chapter 17 commits States to integrated management and sustainable development of coastal area and the marine Environment under their sovereignty and in accordance with their

²⁰ United Nations Conference on Environment and development (UNCED), Rio de Janeiro, 3-14 June 1992. Agenda 21-Chapter 17. Protection of the Oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources Online: <[http://www.un.org/esa/sustdev/documents/Agenda 21/english/Agenda 21.pdf](http://www.un.org/esa/sustdev/documents/Agenda%2021/english/Agenda%2021.pdf)> (Accessed 4 July 2006)

sovereign rights. To achieve this objective, Agenda 21 recognizes the need to integrate policy and decision making processes relating to coastal and marine areas²¹, and to involve all concerned individuals, groups and organizations in planning and decision making steps²².

Paragraph 17.5(b) emphasizes that “States must ensure that all uses of the coastal areas and their interactions are identified”, and that they have developed systems to reflect change in the value of coastal and marine areas²³. Well-defined coastal management related issues must also be considered by States. Planning and implementation must embrace preventative and precautionary approaches that can include prior assessment and systematic observation of the impact of major projects²⁴.

- Program area B: Marine Environmental protection

Program area B recommends proactive and anticipatory approaches for preventing degradation of the marine Environment²⁵. Initiatives suggested by the program include the application of preventative, precautionary, and anticipatory approaches to ocean management. Among the more practical objectives of the program are prior assessment of activities that may significantly impact on the marine Environment; ensuring that there are economic incentives for people to avoid degradation of the marine Environment, and ensuring that Environmental, social, and economic developmental policies have integrated measures for the protection of the marine Environment.

In relation to land-based marine pollution, initiatives that must be taken include the assessment, development and promotion of international rules, regulations and initiatives. The program also recommends that States should also include priority actions within national policies to combat concerns over land-based pollution. It also

²¹ *Ibid* at para 17.5(a)

²² *Ibid* at para 17.5(f)

²³ *Ibid* at para 17.5(e)

²⁴ *Ibid* at para 17.5(d)

²⁵ *Ibid* at para 17.21

requires States to take initiatives for preventing land-based activities that cause direct physical destruction of coastal and marine areas²⁶.

- Program area C: Sustainable use and conservation of marine living resources of high seas

Program C is devoted to the use and conservation of the living resources of the high seas. Chapter 17 proposes that the solution to the problem of managing high seas fisheries requires action by States whose nationals and vessels fish on the high seas, as well as cooperation at the bilateral, sub-regional, regional and global levels. Accordingly, the Chapter recommends that States must take action to “address inadequacies in fishing practices, as well as in biological knowledge, fisheries statistics and improvement of systems for handling data”²⁷. States are also recommended to put emphasis “on multiple species management and other approaches which take into account the relationship among species, especially in addressing depleted species, but also in identifying the potential of underused or unused population”.

- Program area D: Sustainable use and conservation of marine living resources under national jurisdiction

Program area D requires that marine living resources under national jurisdiction be managed with a view to achieving sustainable yields²⁸. At the same time, the need to protect and restore endangered marine species, and to preserve “rare and fragile ecosystems as well as habitats and other ecologically sensitive areas” is also recognized. Furthermore states are required to impose limitations on the use of critical habitat areas. States must also ensure that destructive mechanisms used for fishing are prohibited within their national boundaries.

Paragraph 17.85 provides that “States should identify marine ecosystems exhibiting high level of biodiversity and productivity and other critical habitats areas and should

²⁶ *Ibid* at para 17.29

²⁷ *Ibid* at para 17.45

²⁸ *Ibid* at para 17.74(c)

provide necessary limitations on use in these areas, through, inter alia, designation of protected’.

- Program area E: Addressing critical uncertainties for the management of marine Environment and climate change

Program E recognizes that the marine Environment is vulnerable and sensitive to climate and atmospheric changes²⁹. Chapter 17 acknowledges that there are many uncertainties about climate change and particularly about rises in sea level. However, given the potentially devastating effects that such changes might bring especially for small islands and low-lying coastal regions, States are reminded that precautionary measures should be undertaken to address the problem and minimize risk³⁰.

- Program area F: Strengthening international, including regional cooperation and coordination

International cooperation is recognized in chapter 17 to play the role of supporting and supplementing national efforts. In this respect, Agenda 21 maintains its primary focus on the responsibility of States to address marine issues. However, the importance of international cooperation is recognized in this program, and States are exhorted to promote institutional arrangements at national, sub-regional, regional and global levels to support the implementation of other program areas in Chapter 17.

- Program area G: Sustainable development of islands

Program area G provides for the special circumstances of small-island developing States and islands supporting small communities. Such islands are recognized to be ecologically fragile and vulnerable, and at an economic disadvantage because of their small size, limited resources, geographic dispersion and isolation from markets. States commit themselves in Chapter 17 to address the sustainable development of small-island developing States.

²⁹ *Ibid* at para 17.96

³⁰ *Ibid* at para17.97

International Union for the Conservation of Nature and Natural Resources (IUCN)

At the IUCN General Assembly meeting in 1988, a resolution was passed adopting the following specific objectives for a global representative system for marine protected areas:

- To protect and manage substantial examples of marine and estuarine systems to ensure their long-term viability and to maintain genetic diversity;
- To protect depleted, threatened, rare or endangered species and populations and, in particular to preserve habitats considered critical for the survival of such species;
- To protect and manage areas of significance to the lifecycles of economically important species;
- To prevent outside activities from detrimentally affecting the marine protected areas;
- To provide for the continued welfare of people affected by the creation of marine protected areas;
- To preserve, protect and manage historical and cultural sites and natural aesthetic values of marine and estuarine areas, for present and future generations;
- To facilitate the interpretation of marine and estuarine systems for the purpose of conservation, education and tourism;
- To accommodate within appropriate management regimes a broad spectrum of human activities compatible with the primary goal in marine and estuarine settings; and
- To provide for research and training, and for monitoring the Environmental effects of human activities, including the direct and indirect effects of development and adjacent land-use practices.

The development by a State of such a system will be aided by:

- Agreement on a marine and estuarine classification system, including identified bio-geographic areas; and

- Review of existing protected areas, to establish the level of representation of classification categories within those areas; which may require:
 - Determination of existing and planned levels of use of the marine and estuarine Environment and likely effects of those uses
 - Delineation of potential areas consistent with the objectives listed above and determination of priorities for their establishment and management
 - Development and implementation of extensive community education programmes aimed at specific groups, to stimulate the necessary community support and awareness and to achieve substantial self-regulation
 - Allocation of sufficient resources for the development and implementation of management plans, for regulatory statutory review processes, interpretation, education, training, volunteer programmes research, monitoring, surveillance and enforcement programme.

IUCN Protected Area Management Categories

As part of its Global Representative System of protected areas in the land and marine Environment, IUCN has developed a list of categories for protected areas which reflect the differing levels of protection and the diverse range of purposes for which protected areas are declared. These are as follows:

- Category I: Strict Nature Reserve/Wilderness Area: Protected area managed mainly for science and wilderness protection
 - Category 1a: Strict nature reserve: protected areas are managed mainly for science. Definition: Area of land and /or sea possessing some outstanding or representative ecosystems, geological or physiological features and /or species, available primarily for scientific research and/or Environmental monitoring
 - Category 1b: Wilderness area: protected area managed mainly for wilderness protection. Definition: Large area of unmodified or slightly

modified land and/or sea, retaining its natural character and influence, without permanent or significant habitation, protected and managed so as to preserve its natural condition

- Category II: National Park: protected area managed mainly for ecosystem protection and creation. Definition: Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be Environmentally and culturally compatible.
- Category III: Natural monument: protected area managed mainly for conservation of specific natural features. Definition: Area containing one, or more specific natural or natural/cultural features of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.
- Category IV - Habitat/Species Management Area: protected area managed mainly for conservation through management intervention. Definition: Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.
- Category V – Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation. Definition: Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.
- Category VI – Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystem. Definition: Area containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological, while providing at the same time a sustainable flow of natural products and service to meet community needs.

Since the 1992 “Earth Summit” in Rio de Janeiro, States have become much more aware of the need to protect and manage their marine resources. They realize that it’s not just about creating wealth today, but ensuring that marine resources are protected for future generations³¹. The IUCN categories provide consistency in the designation and management of MPAs, and assists with evaluation of their adequacy and effectiveness.

The World Summit for Sustainable Development (WSSD)

During the 2002 World Summit for Sustainable Development (WSSD), Governments agreed to establish representative networks of MPAs through the ocean. The Summit emphasized the need to maintain the productivity and biodiversity of important marine and coastal areas, and set target dates of:

- 2012 for the establishment of representative network of Marine Protected Areas based on scientific information and consistent with international law;
- 2015 for restoration of depleted fish stocks; and
- 2010 for the application of the ecosystem approach to ocean and fisheries management.

WSSD identify actions needed for achieving sustainable development of marine and coastal areas.

The World Parks Congress (WPC)

The 2003 Durban World Parks Congress called on the international community as a whole to establish by 2012 a global system of effectively managed, representative networks of marine and coastal protected areas and to implement an ecosystem-based approach to sustainable fisheries management and marine biodiversity conservation³².

³¹ United Nations Conference on Environment and development (UNCED), Rio de Janeiro, 3-14 June 1992. Agenda 21-Chapter 17. Protection of the Oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources Online: <<http://www.un.org/esa/sustdev/documents/Agenda 21/english/Agenda 21.pdf>> (Accessed 4 July 2006)

³² World Park Congress. Rec 22: Building a global system of marine and coastal protected area networks. See online:

The Congress confirmed that, if managed properly, marine resources offer enormous potential for effective wealth creation and poverty reduction³³. Policy makers worldwide have committed to using marine protected areas as a mechanism for promoting resource management while improving economic well fare³⁴.

The second and third World Conservation Congress recalled IUCN's commitment to the goal of implementing effective protection, restoration and sustainable use of biological diversity and productivity and ecosystem processes on the high seas (including the water column and seabed) and the establishment of a representative system of marine protected areas, at regional and global scales, that include the high seas³⁵.

The Convention on Biological Diversity (CBD)

The Convention on Biological Diversity is a global instrument that addresses the three levels of biological diversity: genetic resources, species and ecosystems. It recognizes that conservation of biological diversity is a common concern of human kind and that investments in conserving biodiversity will result in Environmental, economic and social benefits. Its triple objectives are to conserve biological diversity, to use the components of biological diversity in a sustainable way, and to share equitably the benefits arising out of genetic resources.

The ‘‘Jakarta Mandate’’ is a global consensus on the importance of marine and coastal biodiversity endorsed at the second meeting of conference of parties in Jakarta in

<http://www.iucn.org/themes/wcpa/wpc_2003/pdf/english/proceedings/recommendation/pdf>. (Accessed 4 July 2006)

³³ WPC Recommendation V.22 Building a Global System of Marine and Coastal Protected Area Network <http://www.iucn.org/themes/wcpa/wpc_2003/pdf/english/proceedings/recommendation/pdf> (Accessed 4 July 2006)

³⁴ Ruitenbeek. J, Hewawasam. I, and Ngoile. M, Blueprint 2050: Sustaining the Marine Environment in Mainland Tanzania and Zanzibar 2005. IBRD/ World Bank, Washington, DC. pp 125.

³⁵ (Resolution 2.20 Conservation of marine biodiversity adopted by 2nd World Conservation Congress, Amman, 2000; and Resolution 3.064 Conservation and sustainable management of high seas biodiversity adopted by 3rd World Conservation Congress, Bangkok, 2004)

November 1995. It identifies the major threats to marine and coastal biodiversity, and the principal legal and policy measures needed to address them³⁶.

The CBD, through its programme of work adopted in 1998, and reviewed and updated in 2004, focuses on substantial improvement in marine ecosystem health and coastal water quality by protecting pollution from land-based activities, integrated marine and coastal area management, the sustainable use of living resources, marine and coastal protected areas, mariculture and alien species³⁷.

The fifth CBD conference of Parties recognized that conservation and sustainable use of biological diversity is essential to the survival of species and also benefits humankind, particularly those people who are dependent on biological resources for their livelihood. It further recognized the importance of integrating, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into sectoral or cross-sectoral plans, programmes and policies, and recognizing the importance of addressing this issue in national biodiversity strategies and action plans, in accordance with Article 6 and 10 of the CBD.

Article 6 of the CBD requires each Contracting Party, in accordance with its particular conditions and capabilities:

- Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this convention relevant to the Contracting Part concerned; and
- Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies

³⁶ Conference of Parties Cop 2 (Decision 11/10 para. 7,9,10 and 14) Conservation and Sustainable Use of Marine and Coastal Biological Diversity, online:

<<http://www.iodiv.org/decisions/default.aspx?m>> (Accessed 4 July 2006)

³⁷ Fourth Ordinary meeting of the Conference of Parties to the Convention of Biological Diversity (Cop4) Bratislava, Slovakia (4 – 15 May 1998) and Seventh Ordinary Meeting of the Conference of Parties (Cop7) Kuala Lumpur, Malaysia (9 – 20 February 2004) online:

<<http://www.biodiv.org/convention/cops.asp>> (Accessed 4 July 2006)

Article 10 of the CBD requires each Contracting Party as far as possible and as appropriate:

- Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;
- Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity; and
- Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

The eighth Conference of Parties urged Parties and other Governments to increase the effective protection and management of marine ecosystems, paying particular attention to integrating marine protected areas into the wider seascape, and to increase collaborative activities to protect ecosystems in marine areas beyond the limits of national jurisdiction.

MPAs provide a means for managing coastal and marine resources and achieving the objective of sustainable development and conservation of marine biodiversity. Efforts must be made to the global and national level to:

- Establish and implement a network of ecologically representative and well managed MPAs;
- Improve the management of existing MPAs by ensuring that they are well managed; and
- Reduce the external threats such as human activities and climate change to MPAs

3 AUSTRALIA'S OCEANS POLICY

3.1 Nature and evolution of Australia's Oceans Policy

Australia's Oceans Policy was launched in 1998 with the goal of coordinating marine activities in Australia to create an effective and efficient ocean management regime. Australia's Oceans Policy established the framework for integrated and ecosystem-based planning and management for the marine jurisdictions. With regards to this, former Minister for Environment, Senator Robert Hill, has stated:

Australia's Oceans Policy is neither solely an Environment protection policy nor solely an economic development policy. It is both. It is a Policy for the ecologically sustainable development of our oceans. The Oceans Policy establishes the broad principles and planning and management approaches necessary to achieve that goal³⁸.

Ocean policy recognizes that while there may be pressure on the ocean from many uses, these need to be managed carefully, supported by an enhanced understanding of the complex marine ecosystem. The Australian Government has demonstrated through the Australia's Oceans Policy its commitment to maintaining the health of ocean ecosystem and their marine biological diversity.

3.1.1 Policy development process

The policy development process was led by the Department of Environment. However, given that Australia's oceans fall within the jurisdiction of State, Territory and Commonwealth Government, an extensive consultation process was undertaken that included all Governments, the community, interest groups and other major stakeholders.

The process began with the release of the Ocean Policy Consultation Paper by the Prime Minister in April 1997. The consultation process led to the Australian Ocean Forum in

³⁸ See: Commonwealth of Australia, Australia's Oceans Policy (Environmental Australia, 1998), online: <http://www.oceans.gov.au/publications_policy.jsp> (Accessed 4 July 2006)

December 1997³⁹. The Forum hosted representatives from all Governments, scientists, policy makers, industries, conservation and other non Governmental organization interests.

While the policy was completed and signed by the Prime Minister in late 1998, the State and Territory Governments chose not to sign it, thus it remained binding only at the Commonwealth level.

3.1.2 Key principles relevant to Australia's Oceans Policy

Australia's Oceans Policy incorporates a number of major planning principles, including:

- Ecosystem-based Management and Integration

Ecosystem-based management (EBM) is a management approach that recognizes that maintaining the structure and function of ecosystems is vital and that human uses and ecosystem health are interdependent. Australia's ocean ecosystems and its marine biological diversity are core national assets. If their use is well managed, they can meet a broad range of economic, social and cultural aspirations. Marine planning under Oceans Policy uses entire ecosystems as the basic planning unit. As a result, marine plans seek to integrate across jurisdictions and sectors to ensure that all impacts on the ecosystem are considered concurrently.

- Ecologically Sustainable Development

Ecologically sustainable development (ESD) is defined in Australia's National Strategy for Ecologically Sustainable Development as "using, conserving and enhancing the community's resource so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased."⁴⁰

³⁹ See Commonwealth of Australia, Canberra, Australia's Oceans Policy: Report of the Forum held in Canberra on 2-3 December 1997 online:

<<http://www.deh.gov.au/coasts/oceans-policy/publications/forum97.html>> (Accessed 4 July 2006)

⁴⁰ National Strategy for Ecologically Sustainable Development 1992. Online:

<<http://www.Deh.gov.au/esd/national/nsesd/strategy/index.html>> (Accessed 9 July 2006)

Ecologically Sustainable Development can only be achieved if the ecosystem can be maintained at a level wherein the resources it provides are available for future generations. The ability to use these in the long term is dependent on maintaining the health and integrity of the ecosystem that provide them. Australia's Oceans Policy recognizes that "ocean ecosystem health and integrity is fundamental to ecologically sustainable development"⁴¹.

- Multiple Use Management

Implementation of multiple use management requires scientific support for decision-making and the operational use of performance measures. Multiple use management requires all ocean resource use (extractive and non-extractive) to be considered jointly. This allows the cumulative impact of ocean resource use and the interaction between different uses to be understood and quantified.

- Precautionary Approach

Incomplete information on possible impacts should not postpone action intended to reduce or avoid unacceptable levels of change, or to prevent serious or irreversible Environment degradation of the oceans. If the potential impact of an activity is uncertain, priority should be given to maintaining ecosystem health. The implication of the approach is that: In order to protect the Environment, the precautionary approach shall be widely applied by nations according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent Environmental degradation.

- Best Available Science and Adaptive Management

Improvement of coordination and integration of research efforts is fundamental to maximizing their effectiveness and efficiency, particularly in the area of Governmental funded research. Together these two approaches require the identification of useful

⁴¹Australia's Oceans Policy, 1998, volume 1, p.19 online:
<<http://www.deh.gov.au/coasts/oceans-policy/publications/pubs/policyVI.pdf>> (Accessed 4 July 2006).

indicators and performance measures and the close monitoring of those indicators and measures so the management plan can remain strategic and effective.

- Indigenous rights

The policy provides for the participation and representation of indigenous people in all processes related to the implementation of the Oceans Policy. It recognizes the responsibilities and interests of indigenous peoples in ocean Environments. The policy's objectives include the involvement of the Aboriginal and Torres Strait Islander peoples in the use, conservation and management of Australia's marine jurisdiction. The Australian Government, through the National Oceans Office, has taken measures to engage indigenous people in progressing key goals of Australia's Oceans Policy. Australia's first Regional Marine Plan – the South-east Regional Marine Plan (SERMP) – was released in 2004. One of the actions identified in the Plan is the development of Sea Country Plans as a potential vehicle for Indigenous involvement in natural resources uses and management. Sea country planning aims to help Indigenous people negotiate with other marine managers and users to develop policies and institutional arrangements that are respectful of Indigenous peoples' rights, interests and responsibilities in the sea country.

- Stewardship and Transparency

The National Ocean Advisory Group (NOAG) includes representatives of industry, conservation, science, law, policy makers, and indigenous people. The group is independent of Government agencies and reports to the Ministers to ensure that the process remains fair and transparent.

3.2 Institutional arrangements

The wide scope of the Oceans Policy required that a number of administrative bodies be created to support its implementation. There are numerous technical working groups, representative groups and advisory panels that have been established to work on specific projects under the Oceans Policy. Ultimately, high-level decisions are made by the

Minister for Environment and Heritage, who will consult relevant expert groups as each particular issue arises.

The following are the key administrative bodies involved in the implementation of the Policy:

- National Ocean Ministerial Board (NOMB): This was established as the decision-making body regarding Regional Marine Plans, and was dissolved in 2004⁴².
- The Ocean Board of Management (OBOM): Is composed principally of the heads of the Commonwealth Australian Government agencies with major marine interests, and serves as a forum for constructive discussion among senior Government department officials on oceans management issues. As the most senior Government body that discusses matters related to Ocean Policy, the advice OBOM provides to the Minister for Environment and Heritage has a significant influence on the management of marine issues.
- The National Ocean Advisory Group (NOAG): Is a high level non-Governmental stakeholder group consisting of representatives from the main interest groups, such as: tourism, conservation, ports, shipping, commercial and recreational fishing, oil and gas, minerals, science, and the local community. It is an independent body, which reports directly to the Minister for Environment and Heritage for the purpose of advising on the effectiveness of the implementation of the Ocean Policy⁴³. NOAG has also proven to be an excellent forum for the exchange of ideas between all sectors simultaneously in one venue without the Government acting as an intermediary.
- The Ocean Policy Science Advisory Group (OPSAG): Was established in 2003 to promote a more coordinated and integrated approach to marine science, across the Commonwealth, in relation to marine planning and implementation of the Ocean

⁴² See online: <http://www.oceans.gov.au/the_oceans_policy_overview.jsp> (Accessed 4 July 2006)

⁴³ The National Advisory Group now provides advice to the Minister for the Environment and Heritage, rather than the board. See online: <http://www.oceans.gov.au/the_oceans_policy_overview.jsp> (Accessed 8 July 2006)

Policy. OPSAG involves both Governmental and non-Governmental marine science experts and is supported by the Department of the Environment and Heritage and the Department of Education, Science and Training. It report to the Marine Division of the Department of Environment and Heritage.

- The Marine Division of the Department of Environment and Heritage (including the National Oceans Office): Is responsible for the development and implementation of the Oceans Policy and marine planning, and provides support and advice on a number of technical topics to other groups and agencies. The Marine Division coordinates the day-to-day development of the oceans policy.
- The Council of Australian Governments (COAG): This is the primary body that negotiates across jurisdictions and coordinates between the State and Territory Governments and the Commonwealth Australian Government. COAG is the highest interGovernmental forum in Australia, comprising of the Prime Minister, State Premiers, Territory Chief Ministers, and the President of the Australian Local Government Association. Under the leadership of COAG, a number of Ministerial Councils, with representatives from each jurisdiction, meet to discuss specific policy matters, including those related to the development and implementation of Australia's Oceans Policy.

3.3 Oceans Policy Legislation

Because the State and Territory Governments chose not to sign the policy, it is binding only to the Commonwealth Government. Therefore, Australia's Oceans Policy is not legislated. The Oceans Policy is a high-level "umbrella" policy in the sense that it does not replace existing policies and legislation; rather it is designed to integrate and coordinate existing mechanisms without adding further oceans management arrangements. Since the Ocean Policy did not replace, or remove, existing instruments, the policy draws together the range of existing programs as a guide for ocean users.

3.4 Oceans Policy Implementation

In order to focus the Oceans Policy into a regional context, a series of regional marine plans were developed, based on large marine ecosystems for the purpose of integrated ocean planning and management. The regional scale was chosen due to the fact that the goals of the policy were so diverse and the scale so large. These plans were intended to be the primary implementation tool for the Ocean Policy. Thus, it has been noted:

The development of Regional Marine Plans will provide a structured and orderly process for the ecosystem-based allocation of resource access and use across and within sectors⁴⁴.

Progress on implementation of the Ocean Policy

In May 2004, the South-east Regional Marine Plan was finalized. This is Australia's first regional marine plan and it outlines the way in which the Australian Government and stakeholders are working together to maintain ecosystem health while promoting ecologically sustainable development. The Northern and South-west Regional Marine Plans are still underdevelopment, while others are yet to be announced.

What did the South-east Regional Marine Plan aim to achieve?

The Plan aimed to provide for development that improves the quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. The Plan identified nine regional objectives, a number of actions and the positive outcomes expected with its implementation (See Table 1: South-east Regional Marine Plan; Objectives, Actions and Outcomes).

⁴⁴ See Commonwealth of Australia, Australia's Oceans Policy (Environmental Australia, 1998), online: <http://www.oceans.gov.au/publications_policy.jsp> (Accessed 4 July 2006)

Table 1: South-east Regional Marine Plan; Objectives, Actions and Outcomes expected

Objective	Key actions	Outcomes
1. Ensure that all ocean uses are ecologically sustainable	<ol style="list-style-type: none"> 1. Design a monitoring and reporting regime to determine the ecological, social and economic health of the Region. 2. Conduct a risk assessment to identify the combined effects of the activities. 	A new way of understanding and measuring the ecosystem as a whole that provides a backdrop for management of resources for individual users.
2. Protect, conserve and restore marine biodiversity, ecological processes, and natural and cultural marine heritage.	<ol style="list-style-type: none"> 1. Develop a system of representative marine protected areas for the Region. 2. Improving knowledge of marine ecosystems, including better mapping of the seafloor and its habitats. 3. Do targeted work on key threats to the Region's marine biodiversity, e.g. declining water quality and introduced marine species. 	A set of representative and important habitats, that support marine biodiversity, will be protected and the impacts of priority threat to these ecosystems will be minimized.
3. Increase long-term security of access and certainty of process for existing and future marine-based industries.	<ol style="list-style-type: none"> 1. Review marine related laws and regulations that apply in the Region to see where improvement can be made. 2. Ensure industry representation and participation in marine management, e.g. through membership of an advisory group for the region. 3. Provide a clear process for future management planning and development that considers existing access and use. 	Industries can actively manage and plan for future growth with access to better information and advice about management requirements. They will also have opportunities to check that their current and future needs are being considered in the development of management actions in the Region.
4. Promote economic development and job creation in the Region consistent with ecologically sustainable development.	<ol style="list-style-type: none"> 1. Improve understanding of key economic issues facing marine industries, such as increasing operational and development costs, over-capitalization, and internationally competitive markets. 2. Promote existing best practice and innovation in marine-based industries, such as improvements to gear technology 3. Pilot a Regional tourism trail based on the marine Environment, sea food and culture. 	Support for marine-based industries to capitalize on their investments and further refine their activities to introduce innovative technology and explore new markets.
5. Integrate management of access, allocation conservation and use of marine resources to ensure fairness and accountability to	<ol style="list-style-type: none"> 1. Efficiencies in planning and spatial management across sectors, e.g. marine protected areas and fisheries closure. 2. Establish a clear process for addressing cross-sectoral issues, including agreed approaches to multiple use management in the Region. 	A coordinated approach to marine management in the region that is simple, well understood and that recognizes the needs of all users and the community.

the community and all users.	3. Regular reporting and review procedures incorporated in a performance assessment system.	
6. Increase knowledge and understanding of the Region to improve the capacity to pursue ecological sustainable development.	<ol style="list-style-type: none"> 1. Improve coordination of research efforts and the development of new research partnerships, e.g. between industry and Government. 2. Make information available to all on a central web-based ocean portal. 3. Report on the effectiveness of management actions and establish a way of adapting management that is based on risk assessment. 	More and better coordinated science will be conducted in the Region, leading to improved evidence-based decision making.
7. Enhance community and industry stewardship and understanding of the values and benefits of the Region and involve them in its management.	<ol style="list-style-type: none"> 1. Implement a marine education strategy that includes teaching packages for schools. 2. Support the establishment of a Marine Discovery Centre Network. 3. Establish stakeholder advisory group to provide ongoing industry, community and expert participation in management of the Region. 	Communities will be informed about the importance of managing marine ecosystem to promote responsible and wise use of the marine resources in the Region and build their capacity to be involved in management.
8. Involve indigenous communities in management of the Region in a manner that recognizes and respects their rights, custodial responsibilities, contributions and knowledge.	<ol style="list-style-type: none"> 1. Build capacity of communities to participate in management through the development of Sea Country Plans. 2. Look for opportunities for indigenous participation in commercial activities in the Region e.g. commercial fishing. 	Support indigenous communities to take an active part in marine resource use and management in the Region.
9. Take into account in decision making the needs, values and contributions of the community and industry, the national interest and international obligations relevant to the region.	<ol style="list-style-type: none"> 1. Establish agreed process which provides for consistent and inclusive decision making across Australian Government agencies. 2. Work with South-east State Governments to explore arrangements that lead to coordinated oceans management in the Region. 	A more strategic coordinated approach to marine management in the Region.

Source: South-east Regional Marine Plan 2004.

Online: <<http://www.deh.gov.au/coasts/mbp/publications/sermp.html>> (Accessed: 4 June 2006)

4. AUSTRALIA TOWARDS A NETWORK OF MARINE PROTECTED AREAS

Australia has a wide range of coastal and marine Environments, which extend approximately 32,000 km from the tropical northern regions to temperate southern latitudes. The extent and diversity of Australia's marine and coastal Environments has resulted in some of the most diverse, unique and spectacular marine life in the world – supporting some of the highest numbers of marine species in the world⁴⁵.

As an island State covering an entire continent and bordered by three oceans, Australia has the responsibility for a considerable area of the marine Environment: some 16 million square kilometers. As marine resources come under increasing pressure from over-fishing and other human activities, as well as from the effect of climate change, there is a need for long-term viable solutions, including the establishment of carefully selected and well managed networks of MPAs.

Australia is committed to the protection of marine biodiversity and ecological processes, and the sustainable use of marine resources, through the principles and goals of Ecological Sustainable Development (ESD).

This commitment has been ratified through Australia's international responsibilities and obligations under the Convention on Biological Diversity, and implemented at the national level by the States and Territories under the InterGovernmental Agreement on the Environment (IGAE)⁴⁶, through the development of national strategies such as the National Strategy for Ecological Sustainable Development⁴⁷ and the National Strategy for the Conservation of Australia's Biological Diversity⁴⁸.

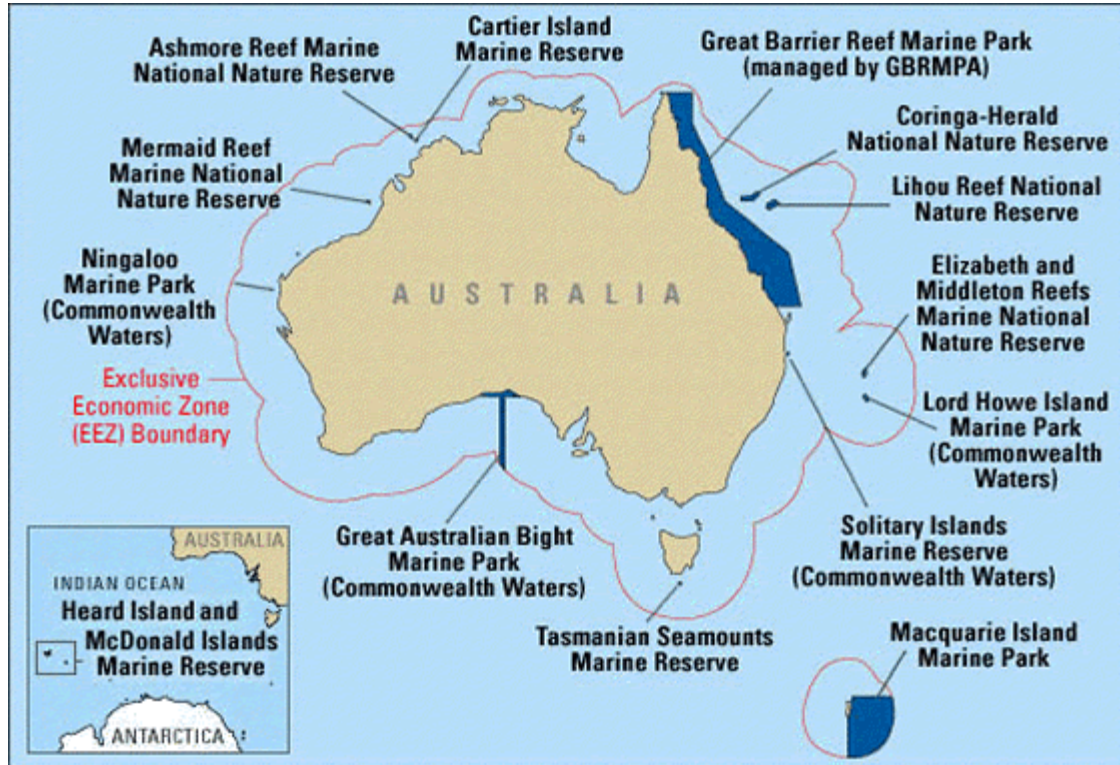
⁴⁵ Jack, S and Craig, D 2004: Marine Reserves: A Guide to Science, Design and Use. Island Press, 1718 Connecticut Ave., Suite 300, NW Washington, DC 20009 pp 383.

⁴⁶ InterGovernmental Agreement on the Environment (IGAE) is an agreement which establish arrangements by which Commonwealth, State/Territory and Local Governments interact on Environmental matters

⁴⁷ Online:<http://www.oceans.gov.au/content_policy_VI/page_007.jsp> (Accessed 8 July 2006)

⁴⁸National Strategy for Conservation of Australia's Biological Diversity See online:<<http://www.deh.gov.au/biodiversity/publication/strategy/cover.html>> (Accessed 8 July 2006)

Figure 1: Commonwealth Marine Protected Areas



Source: <http://www.deh.gov.au/coasts/mpa/commonwealth> (Accessed: 4 June 2006)

Australia has made great progress towards creating a National Representative System of Marine Protected Areas (NRSMPA) - an important contribution to its commitment to the Johannesburg Plan of Implementation to achieve this goal by 2012.

Australia played a leading role in securing positive outcomes on the sustainable management of oceans. The Johannesburg Plan of Implementation includes a section on oceans, seas, islands and coastal areas that recognizes oceans as essential component of the earth's ecosystem and sets an ambitious forward agenda for marine conservation and sustainable development⁴⁹.

⁴⁹ World Summit for Sustainable Development Plan of Implementation See online: http://www.johannesburgsummit.org/html/documents/summit_docks/2309_planfinal.htm (Accessed 12 July 2006)

The ocean, sea, islands and coastal section of the JPOI focuses on specific issues that are relevant to marine protection, including: conserving marine biodiversity, protecting vulnerable areas such as coral reefs and wetlands, reducing marine pollution, eliminating illegal fishing, and achieving better coordination across ocean-related UN and regional organizations.

Ensuring the sustainable development of the oceans requires effective coordination and cooperation, including at the global and regional levels, between relevant bodies, and actions at all levels to promote the implementation of chapter 17 of Agenda 21. Chapter 17 provides the programme of action for achieving the sustainable development of oceans, coastal areas and seas through its programme areas of integrated management and sustainable development of coastal areas, including: EEZ; marine Environmental protection; sustainable use and conservation of marine living resources; addressing critical uncertainties for the management of the marine Environment and climate change; strengthening international and regional cooperation and coordination; and sustainable development of small islands

4.1 Australia's marine jurisdictions

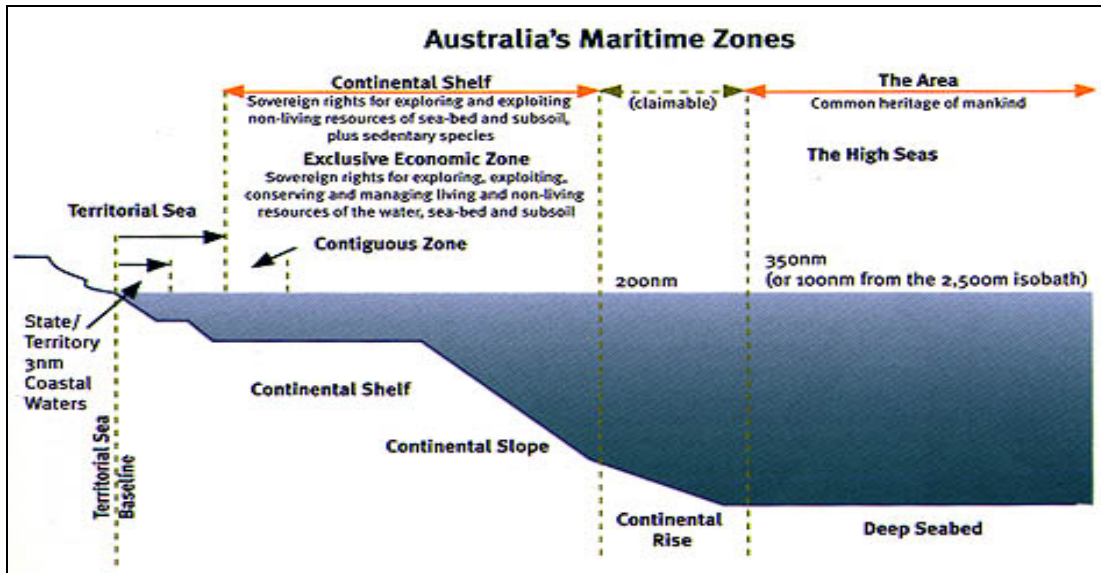
The management of Australia's marine jurisdiction is shared between seven State and Territory Governments in addition to the Commonwealth Australian Government. Within each Government's area of jurisdiction, management is divided along sectoral lines that operate independently of one another with varying degrees of integration.

State and Northern Territory Governments have primary responsibility for marine Environments up to three nautical miles out from the baselines. Along most of the coastline, the baseline is the low water mark. The Commonwealth Government manages the oceans from the State or Territory limit to 200 nautical miles.

Therefore, depending on where they are located marine protected areas in Australia waters are managed by either, State, Territory, Commonwealth Government agencies or a

combination of Government agencies. Within their jurisdictions, marine protected areas can include reefs, seagrass beds, tidal lagoons, mudflats, saltmarshes, mangroves, rock platforms, shipwrecks, archeological sites, underwater areas on the coast and seabeds in deep water.

Figure 2: The legal and constitutional framework of Australia’s marine areas



Source: <http://www.oceans.gov.au> (Accessed: 4 June 2006).

The territorial sea: The outer limit of the territorial sea is 12 (NM) seaward of the baseline. Australia has sovereignty over the territorial waters. It may therefore impose comprehensive controls in this area, with the one major exception that it must respect the right of innocent passage of foreign vessels⁵⁰.

The contiguous zone: This is the area between 12 NM and 24 NM seaward of the baseline. In this zone, Australia can take limited enforcement measures in relation to customs, fiscal, sanitary and immigration matters⁵¹.

⁵⁰ United Nation Convention on the Law of the Sea 1982. Article 17

⁵¹ *Ibid at* Article 33

Exclusive Economic Zone (EEZ): This is the area between 12 NM and 200 NM seaward of the territorial sea baseline. In this area Australia has the right to explore and exploit living and non-living resources, and the concomitant obligation to protect and conserve the marine Environment⁵².

The continental shelf: The area between 12 NM and 200 NM seaward of the territorial sea baseline (that is, it covers much of the same area as the EEZ) and any areas of physical continental shelf beyond 200 NM⁵³.

State Government agencies managing marine protected areas

In addition to State, Territory and Commonwealth Governments marine protected areas in Australia waters are also managed by Government agencies or a combination of Government agencies such as:

- The Queensland Parks and Wildlife Service

The marine park rangers employed by QPWS are responsible for the day-to-day management of the marine park. They participate in resource monitoring and assessment, education, surveillance patrols and enforcement. Rangers working together with traditional owners, they help identify and protect sacred and special sites, and manage cultural resources.

The QPWS provide financial assistance and training to rangers and community councils. It participates in collaborative projects in the GBRMP and State marine park areas. In 2001, the Queensland Government, through QPWS, prepared a master plan for Queensland's parks systems. The plan outlines the direction for the management of Queensland protected Areas. The Plan structured within four dimensions of park management under which 12 principles are identified, each of the 12 principles provides the foundation for developing strategic actions that will guide the Queensland parks system.

⁵² *Ibid at Article 56*

⁵³ *Ibid at Article 76.*

- Western Australia Department of Conservation and Land Management (CALM)

Is the primary manager of marine conservation reserves, department of Fisheries manages recreational fishing in marine conservation reserves in close cooperation with CALM. The management arrangements for each marine conservation reserve are outlined in the relevant management plan. As an agency with integrated responsibilities, CALM manage, lands and waters for the conservation of biodiversity at ecosystem, species and genetic levels, including management for the renewable resources they provide, and for the recreation and visitor services they can sustainably support. The Department assists the Conservation and Land Management Act statutory bodies (Conservation Commission, Marine Parks and Reserves Authority, and Marine Parks and Reserves Scientific Advisory Committee) to carry out their statutory functions. CALM provides broad conservation services to the WA community, and arrange of customer services directly to the public. Services provided by CALM include:

- Protection and recovery of threatened plant, animal and ecological communities;
- Preparation and implementation of management plans for all Department-managed lands and waters;
- Development and management of marine parks so that people can enjoy nature and natural areas;
- Provision of a range of safe nature-based recreation opportunities and visitor services that are compatible with conservation and recreation requirements; and
- Licensing and lease management of commercial tourism and recreation activities on CALM managed waters.

4.2 Legislation and Institutional Arrangements

The principal Australian legislation for establishing and managing protected areas is the Environmental Protection and Biodiversity Conservation Act 1999(cth) (EPBC Act). Other legislation also provide for establishment of MPAs at the States and Territory levels (see Table 2: State/Territory MPA legislation). The EPBC Act and the associated Environment Protection and Biodiversity Conservation Regulation 2000 (EPBC Regulation) provide a national framework for Environment protection through focusing on protecting areas of national Environmental significance and on the conservation of Australia’s biodiversity.

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The Act sets out the legal requirements for establishing and managing Commonwealth reserves, which include marine protected areas, with the exception of the Great Barrier Reef Marine Park which is governed by the Great Barrier Reef Marine Park Act 1975 and is managed by the Great Barrier Reef Marine Park Authority (GBRMPA).

The EPBC Act also establishes the office of Director of National Parks, a crown corporation with the mandate to manage Commonwealth reserves. The Director is assisted in performing this function by the staff of Parks Australia (Department of Environment and Heritage).

The Australian Government, through the Director of National Parks, manages Commonwealth parks and reserves including areas located on external islands territories and within Australian waters beyond the State limit of three nautical miles.

Under the EPBC Act, the Director of National Parks is responsible for:⁵⁴

- The administration, management and control of Commonwealth reserves and conservation zones;

⁵⁴ Environment Protection and Biodiversity Conservation Act 1999 section 514B and 514C

- The protection, conservation and management of biodiversity and heritage in commonwealth reserves and conservation zones;
- Consulting and cooperation with other States with regard to matters relating to the establishment and management of national parks and nature reserves in those States;
- The provision of training in the knowledge and skills relevant to the establishment and management of national parks and nature reserves;
- Research and investigation relevant to the establishment and management of Commonwealth reserves;
- Making recommendations to the Australia Government minister for the Environment; and
- Administration of the Australia National Parks Fund

Table 2: State/Territory MPA legislation

JURISDICTION	LEGISLATION
Queensland	Marine Parks Act 1982 replaced by Marine Parks Act 2004
Western Australia(WA)	Conservation and Land management Act 1984 Fish Resources Management Act 1994
New South Wales (NSW)	Marine Parks Act 1997 Fisheries Management Act 1994 National Parks and Wildlife Act 1974
South Australia (SA)	National Parks and Wildlife Act 1972 Fisheries Act 1982 Historic Shipwrecks Act 1981 Wilderness Protection Act 1992
Tasmania (Tas)	National Parks and Reserves Management Act 2002 Living Marine Resources Management Act 1995
Victoria (Vic)	National Parks Act 1975
Northern Territory (NT)	No specific marine parks legislation; declarations are made under the Territory Parks and Wildlife

The Queensland Marine Parks Act 2004

The main purpose of the Act is to provide for conservation of the marine Environment. This purpose is to be achieved by comprehensive and integrated strategy that involves, among other things, the declaration of marine parks and establishment of zones, zoning plans and management plans.

Western Australia Conservation and Land management Act 1984

The Act establishes a comprehensive set of legislative provisions dealing with State conservation and land management matters. It established a number of statutory bodies including the conservation commission of Western Australia, the Marine Parks and Reserves Authority and the Marine Parks and Reserves Scientific Advisory Committee.

New South Wales Marine Parks Act 1997

The objectives of the Act are:

- To conserve marine biological diversity and marine habitats by declaring and providing for the management of comprehensive system of marine parks
- To maintain ecological processes in marine parks
- To provide for ecologically sustainable use of fish and marine vegetation in marine parks; and
- To provide opportunities to public appreciation understanding and enjoyment of marine parks⁵⁵.

South Australia Fisheries Act 1982

An Act to provide for the:

- Conservation, enhancement and management of fisheries;
- Protection of marine mammals and the aquatic habitats; and
- Control of exotic fish and disease in fish⁵⁶.

⁵⁵ New South Wales Marine Parks Act 1997.

Tasmania Living Marine Resources Management Act 1995

An Act:

- To promote the sustainable management of living marine resources;
- To provide for management plans relating to fish resources; and
- To protect marine habitats⁵⁷.

Territory Parks and Wildlife Conservation Act

The object of this part is to make provision for the establishment and management of parks and reserves.

4.3 Commonwealth, State and Territory MPAs

The Commonwealth, State and Northern Territory Governments exercise separate jurisdiction over the marine Environment. Each Government develops its own policies and laws to establish and manage marine protected areas. In addition, marine protected areas can be managed through a combination of fisheries and parks management laws administered by separate Government agencies.

The Commonwealth Government manages an estate of marine protected areas that are Commonwealth reserves under the Environment Protection and Biodiversity Conservation Act 1999 (Table 3: Marine Protected Areas that are Commonwealth reserves). In general, the Commonwealth Government manages the oceans from the State or Territory limit to the edge of the marine jurisdiction at the limit of the Australian EEZ, some 200 NM out to sea. One exception is the Great Barrier Reef Marine Park, which extends seawards from the low water mark.

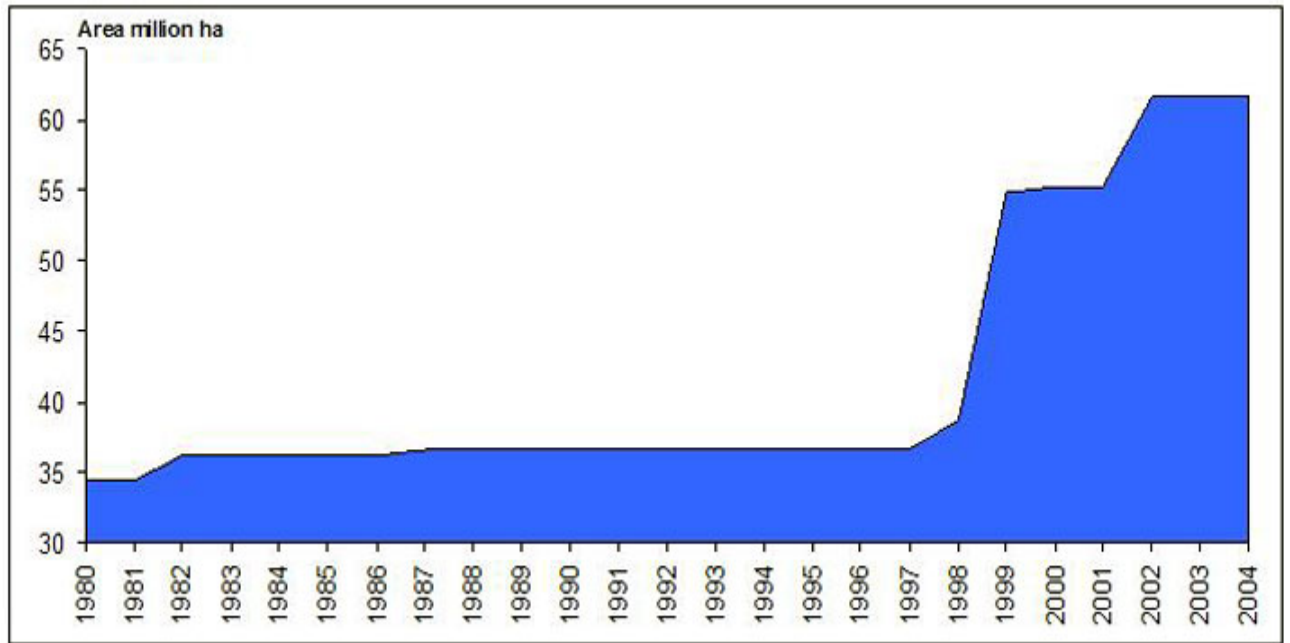
All Governments coordinate their effort on national and cross-jurisdictional issues relevant to marine protected areas. Through cooperative arrangements⁵⁸, a single marine

⁵⁶ South Australia Fisheries Act 1982.

⁵⁷ Tasmania Living Marine Resources Management Act 1995.

protected area can be a combination of adjacent State, Territory and Commonwealth waters. The Great Australian Bight Marine Park, Ningaloo Marine Park and the Solitary Island Marine Reserve, which include State and Commonwealth waters, are examples of successful cross-jurisdictional management.

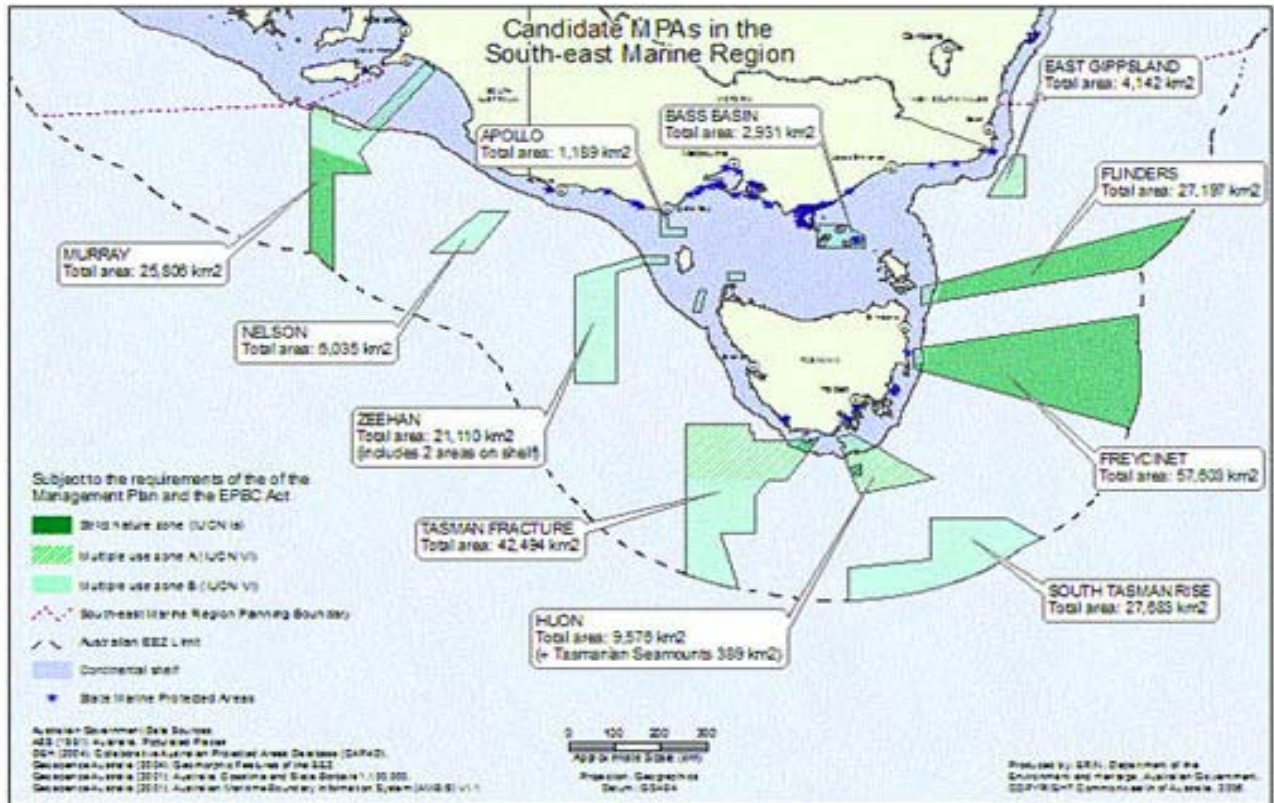
Figure 3: Total area of Commonwealth water protected 1980 – 2004



Source: <http://www.deh.gov.au/coasts/mpa/commonwealth> (Accessed 4 June 2006)

⁵⁸ For example arrangements developed between: Department of Environment and Heritage and New South Wales Marine Parks Authority under a memorandum of understanding for cooperative management of Solitary Island Marine Reserve; Department of Environment and Heritage, Western Australia Department of Environment and Conservation and Western Australia Department of Fisheries for the management of Ningaloo Marine Park; and Commonwealth and South Australia Governments for management of Great Australia Bight Marine Park.

Figure 4: New established MPA in Australia South-east Marine Region



Source: <http://www.deh.gov.au/coasts/mpa> (Accessed 14 July 2006)

4.4 Australia's World Heritage Sites

The convention concerning the protection of the world cultural and natural heritages, the World Heritage Convention, was adopted by the UNESCO General Conference in 1972, came into force in 1975, and was ratified by Australia in 1974. Article 4 of the convention requires State parties to identify, delineate, protect, conserve and present these different sites, and to transmit them to future generations. Article 2 sets out four criteria of outstanding universal value as:

- An example of a major stage in the earth's evolutionary history;
- An outstanding example of geological processes, biological evolution and peoples interaction with their natural Environment;
- A place with unique, rare and superlative natural phenomena; and

- A place which provides habitats for rare and endangered species of plants and animals.

The World Heritage Convention makes an important contribution for the protection of marine protected areas. It ensures that these precious marine areas will be maintained and thrive for generation to come

In Australia, there are about sixteen sites on the World Heritage List, of which eight are of marine. These include: Heard and McDonald Island; Macquarie Island; Tasmania Wilderness; Lord Howe Island; Shark Bay; Frasier Island; Wet Tropical of Queensland; and the Great Barrier Reef.

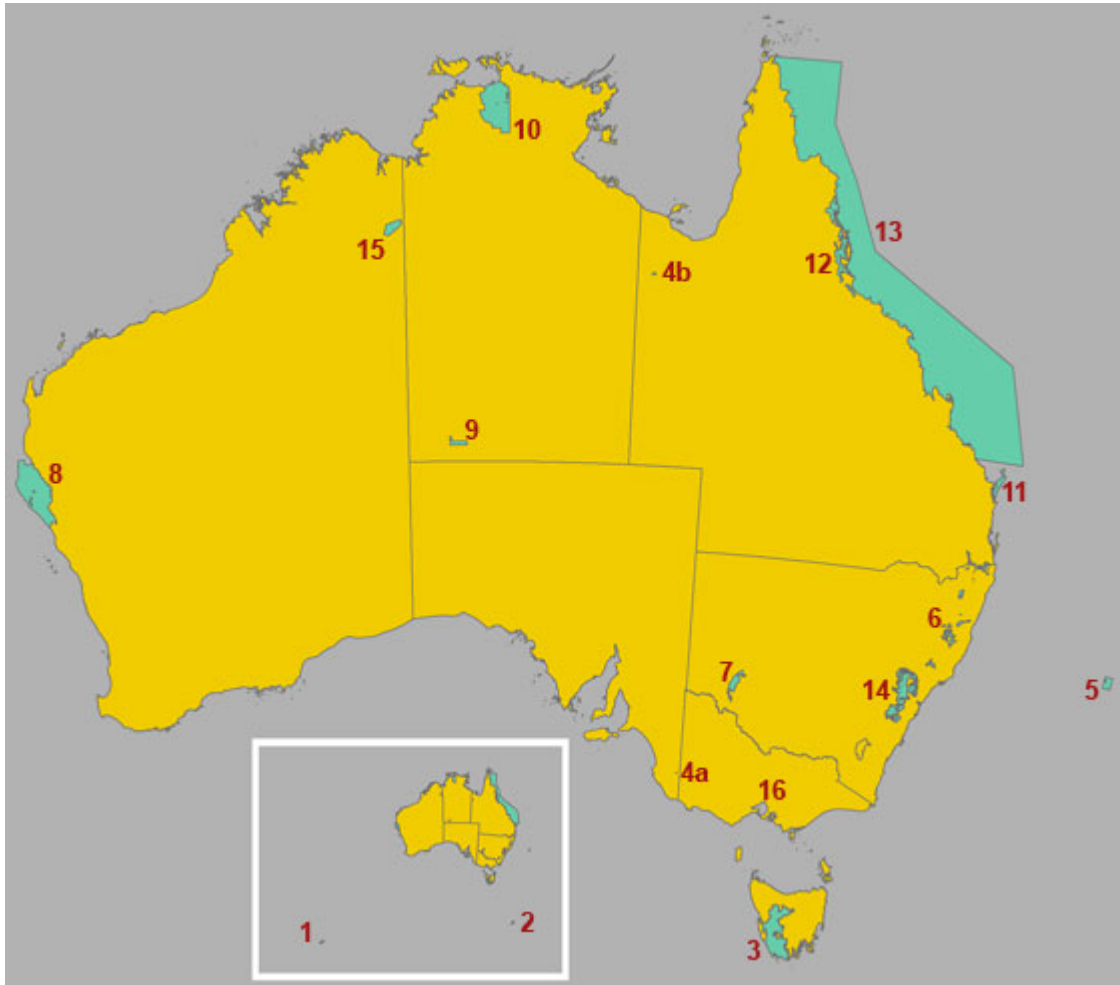
All Australia's sites that have been inscribed on the World Heritage List are declared World Heritage properties and are therefore protected under the Environment Protection and Biodiversity Conservation Act 1999, which replaces the World Heritage Properties Conservation Act 1983 (WHPC Act).

The Act provides protection for World Heritage Properties by ensuring that an Environmental Impact Assessment process is undertaken for proposed actions that will, or are likely to, have a significant impact on the World Heritage value of a declared World Heritage Property⁵⁹.

As a State party to the World Heritage Convention, Australia has a responsibility to protect world heritage sites. Australia Ocean Policy ensures that appropriate legal, institutional and financial arrangements are in place to enable Australia to continue to meet its obligations with respect to the World Heritage Convention.

⁵⁹ Environment Protection and Biodiversity Conservation Act 1999, Policy statement 1.1.

Figure 5: Australia's World Heritage sites



Source: <http://www.deh.gov.au/heritage> (Accessed 17 July 2006)

- | | |
|-----------------------------------|---|
| 1. Heard and McDonald Island | 9. Uluru Kata Tjuta National Park |
| 2. Macquarie Island | 10. Kakadu National Park |
| 3. Tasmanian Wilderness | 11. Fraser Island |
| 4. Australian Fossil mammal sites | 12. Wet Tropics of Queensland |
| 5. Lord Howe Island | 13. Great Barrier Reef |
| 6. Central Eastern Rainforest | 14. Great Blue Mountains Area |
| 7. Willandra | 15. Purnululu National Park |
| 8. Shark Bay | 16. Royal Exhibition Building and Carlton |

Australia's Management Approach on World Heritage Properties

The protection and management of Australia's World Heritage properties involves a cooperative approach between the Commonwealth and State Governments, with relevant State agencies taking responsibility for the on-ground management. The EPBC Act provides a mechanism for the Commonwealth and States to enter into bilateral agreements so as to implement the provisions of the Act and to remove duplication of regulatory processes.

A bilateral agreement is an agreement between the Commonwealth and a State or Territory for the purpose of protecting the Environment, promoting conservation and ecologically sustainable use of natural resources, increasing the efficiency and reducing duplication in Environmental assessment and approval. For example, an assessment bilateral agreement allows the Commonwealth Environment Minister to recognize the assessment processes of a State or Territory upon a receipt of an assessment report from State or Territory. In a same way, an approval bilateral agreement allows the Commonwealth Environment Minister to recognize the approvals processes of a State or Territory.

This provides an avenue for formalizing cooperative arrangements through Commonwealth accreditation of the State's World Heritage management plans and Environmental impact assessment processes. In order to be accredited, the relevant State plan or process must be consistent with the Australian World Heritage principles, as stipulated under the Environment Protection and Biodiversity Conservation Act.

The Great Barrier Reef World Heritage Area

One of the famous properties on the World Heritage list is the Great Barrier Reef, which was inscribed on 26 October 1981, on the basis of its outstanding natural, cultural and historical features and its integrity as a self perpetuating ecological system. The Great

Barrier Reef satisfied all four criteria of outstanding universal value as set out in Article 2 of the World Heritage Convention⁶⁰.

Coverage of the Great Barrier Reef World Heritage Area

The Great Barrier Reef World Heritage Area extends from the tip of Cape York to just north of Fraser Island, and from the low water mark on the Queensland coast to beyond the edge of the continental shelf. It is 348,700 square km in area and includes the Great Barrier Reef Marine Park (93% of the World Heritage Area), Queensland waters not in the Great Barrier Reef Marine Park (2%) and Island (5%).

As the Great Barrier Reef World Heritage Area (the area) contains virtually all of the Great Barrier Reef, it meets the following conditions of integrity necessary to ensure the maintenance of universal values:

- Many middens and other archaeological sites of Aboriginal or Torres Strait Islander origin;
- Over 30 historic shipwrecks, and on the island there are ruins and operating lighthouses which are of cultural and historical significance;
- Superlative natural phenomena and areas of exceptional natural beauty. The Great Barrier Reef is by far the largest single collection of coral reefs in the world, biologically the area supports the most diverse ecosystem, its enormous diversity is thought to reflect the maturity of an ecosystem which has evolved over millions of years on the north east continental shelf of Australia; and
- The habitat requirements for the survival of rare and threatened species. The area provides major feeding grounds for large populations of the endangered species *Dugong dugon* and contains nesting grounds of world significance for the endangered turtle species; green turtle *Chelonian mydas* and loggerhead turtle *Caretta caretta*.

⁶⁰ Great Barrier Reef Marine Park Authority (1981): Nomination of the Great Barrier Reef for inclusion in the World heritage list pp 37.

In accepting the inscription on the World Heritage Listing, the Government of Australia accepted an obligation to ensure the protection, conservation and presentation of the area and its transmission to future generations.

A 25Year Strategic Plan for the Great Barrier Reef World Heritage Area

The Governments of Australia and Queensland have been working together to protect the Great Barrier Reef for many years. In 1994, the 25 Year Strategic Plan for the Great Barrier Reef World Heritage Area was produced to provide strategies for managing and preserving the Great Barrier Reef World Heritage Area for a 25 years period. It provides the basis to ensure the wise use of the Great Barrier Reef World Heritage Area.

On developing the Strategic Plan, from the beginning, emphasis was placed on the concerns and opinions of all stakeholders. These included Governments, Aboriginal and Torres Strait Islander communities⁶¹, conservationists, scientists, recreational users and established Reef industries such as fishing, shipping and tourism.

Overall, the strategic plan was endorsed by almost 70 organizations representing all levels of Government, recreational and commercial users, conservation and scientific groups and Aboriginal and Torres Strait Islander communities.

The overall vision for the Plan states that:

In the Great Barrier Reef World Heritage Area in 25 years there will be: A healthy Environment; sustainable multiple-use; maintenance and enhancement of values; integrated management; knowledge-based but

⁶¹ Torres Strait Islanders and coastal Aboriginal people are two major indigenous populations with cultural, historic and economic interests in Environments and resources contained within the Great Barrier Reef Marine Park. Torres Strait Islanders have been occupying the islands of Torres Strait for at least the last 1000 years. The islands formed about 600 years ago when the land bridge between Australia and Papua New Guinea become flooded by the last great rise in the sea level. Aboriginal people have occupied the Australia land mass for at least 40,000 years. Australia Government aims to provide residents of the inhabited islands with the same rights, opportunities and responsibilities as all Australian, this including promoting resident's economic development and the protection of their natural and cultural heritage. Indigenous communities have an important part in the development of integrated approaches to the planning and management of marine resources.

cautious decision making in the absence of information; and an informed, involved, and committed community⁶².

To realize this vision, the Plan identified eight broad strategic areas which are as follows:

1. Conservation:

The conservation of the Great Barrier Reef World Heritage Area is of importance so as to ensure the persistence of the area as a diverse, resilient, and productive ecological system, while retaining opportunity for a diverse range of experiences and uses consistent with Australia's obligations under the World Heritage Convention.

2. Resource management:

Ecologically sustainable use of resources will help maintain the World Heritage Area in a healthy and productive condition while enabling recreational and commercial benefits to be obtained.

3. Education, communication, consultation and commitment:

To have a community of responsible, informed individuals who have broad-based and widely accepted understanding of the diverse values, natural attributes and ecologically sustainable use of the Great Barrier Reef World Heritage Area, who:

- Show commitment to the maintenance of a healthy natural system;
- Recognize the importance of having the opportunity for input the way the Great Barrier Reef World Heritage area is managed; and
- Act consistently to conserve and use in an ecologically sustainable way Great Barrier Reef World Heritage Area.

4. Research and monitoring:

The achievement of the conservation and ecologically sustainable use of the area and the fulfillment of Australia's obligation under the World Heritage Convention will depend, in

⁶² GBRMPA, 1994, Keeping it Great: The Great Barrier Reef. A 25 – Year Strategic Plan for the Great Barrier Reef World Heritage Area, 1994 - 2019

part, on the knowledge and understanding gained from basic and applied research and monitoring. This strategy focus to obtain and disseminate accurate and timely information that will help decision makers and maximize community confidence in decisions made regarding the Great Barrier Reef World Heritage Area.

5. Integrated planning:

Since the Great Barrier Reef World Heritage Area is vast with many neighbours and it can be threatened by outside activities, this strategy seeks to integrate planning and management of the Great Barrier Reef World Heritage Area and adjacent areas.

6. Recognition of Aboriginal and Torres Strait Islander interests:

For thousand of years Aboriginal and Torres Strait Islanders have used the natural Environment of the area for both cultural and economic purposes in an ecologically sustainable way. Present and future management of the area should recognize this continuing use and that population changes, modern technology and other activities may impose increased pressure on resources requiring innovative management. The strategy aims to have a community which recognizes the interests of Aboriginal and Torres Strait Islanders so that they can pursue their own lifestyle and culture, and exercise responsibility for issues, areas of land and sea, and resources relevant to their heritage within the bounds of ecologically sustainable use and consistent with obligations under the World Heritage Convention and other Commonwealth and State laws.

7. Management process:

For the stakeholder agencies to implement this plan effectively, they will require adequate resources, clear and timely decision-making procedures, informed, inexpensive and rapid methods of resolving conflicts, and appropriate mechanisms for consultation, management and enforcement. The strategy aims to have simple, proactive and coordinated management processes that lead to appropriate, collaborative and timely decisions by Governments, groups and individuals.

8. Legislation:

Unnecessary duplication of legislation causes problems and confusion, particularly for users. Streamlined and complementary legislation will assist in the implementation of the plan within and across the boundaries of the area and ensure the obligations of World Heritage Convention are met.

4.5 A National representative system of Marine Protected Areas

In the early 1990's, Australia's Governments identified a need to protect representative examples of a full range of marine ecosystems and habitats in Marine Protected Areas. They agreed to establish a National Representative System of Marine Protected Areas (NRSMPA) in Australia's waters.

What are the goals of such a system?

The primary goal of NRSMPA is to establish and manage a comprehensive, adequate and representative system of protected areas to contribute to the long-term ecological viability of marine and estuarine systems, to maintain ecological processes and systems, and to protect Australia's biological diversity at all levels⁶³.

Other goals are to⁶⁴:

- Promote the development of protected areas within the framework of integrated ecosystem management;
- Provide a formal management framework for a broad spectrum of human activities, including recreation, tourism, shipping and the use or extraction of resources, the impacts of which are compatible with the primary goal;
- Provide scientific reference sites;
- Provide for the special needs of rare, threatened or depleted species and threatened ecological communities;

⁶³ Online: < <http://www.deh.gov.au/commitment/wssd/publications/mpa.html> > (Accessed: 3 July 2006)

⁶⁴ Carleton Ray, Marine and estuarine protected areas: a strategy for a national representative system within Australian coastal and marine environments 1992. Consultancy report for the Australian National Parks and Wildlife Services

- Provide for the conservation of special groups of organisms, e.g. species with complex habitat requirements or mobile or migratory species, or species vulnerable to disturbance which may depend on reservation for their conservation;
- Protect areas of high conservation value including those containing high species diversity, natural refugia for flora and fauna and centres for endemism; and
- Provide for recreational, aesthetic and cultural needs of indigenous and non-indigenous people.

What is needed in establishing NRSMPA?

The national framework for establishing the NRSMPA in Australia comprises:

- **The Interim Marine and Coastal Regionalization for Australia (IMCRA)**

This is an agreed regional framework for planning resource use and biodiversity conservation, including the establishment of the NRSMPA, which was endorsed in June 1998 by the Government ministers of the Australia and New Zealand Environment and Conservation Council⁶⁵.

As the agreed planning framework for marine conservation, IMCRA provided the basis for developing a nationally-agreed policy framework to support the identification and selection of marine protected areas.

- **Guidelines for Establishing the NRSMPA**

These were prepared by the Australia and New Zealand Environment and Conservation Council Task Force on Marine Protected Areas to assist the Government agencies to develop the NRSMPA and to help stakeholders understand the process⁶⁶. They were endorsed on 11 December 1998 by the Government ministers of the Australia and New Zealand Environment and Conservation Council (ANZECC)⁶⁷. The guidelines deal with

⁶⁵ Interim Marine and Coastal Regionalization for Australia, 1998.

See online: <<http://www.deh.gov.au/coasts/mpa/nrsmpa/pubs/imcra>> (Accessed 3 July 2006)

⁶⁶ Australia and New Zealand Environment and Conservation Council Task Force on Marine Protected Areas, Guidelines for Establishing the National Representative System of Marine Protected Areas (1998) [hereinafter Guidelines]

⁶⁷ Australia and New Zealand Environment and Conservation Council (ANZECC), was a Ministerial Council that operated between 1991 and 2001 and provided a forum for member Governments to develop

the key aspects of establishment of marine protected areas including the functions of the NRSMPA and criteria for identifying and selecting marine protected areas. The guidelines continue to be used by each jurisdiction to reinforce the national commitment to establishing the NRSMPA.

The guidelines provide criteria for the identification of candidate areas for the NRSMPA and selection of sites for MPAs (See Annex 1). For NRSMPA, biodiversity and Environmental criteria are the primary criteria for the identification of candidate areas. Biodiversity and other baseline data are essential to ensure that decision-making is underpinned by good science. Environmental criteria and social, cultural and economic criteria are considered as layers in the decision making process, with criteria from each list able to be used at any stage in the process of identification and selection as appropriate.

- **Strategic Plan of Action for the NRSMPA**

The Plan, endorsed in July 1999 by the Government ministers of the Australia and New Zealand Environment and Conservation Council, sets out the action required to achieve the goals of the NRSMPA and provides a guide to understanding the NRSMPA by defining it in the context of an array of existing mechanisms and agreements that promote the conservation of Australia's marine biodiversity⁶⁸.

The Plan lists the priority actions required to develop the NRSMPA (See Annex 2) which reflect both national and jurisdictional priorities, and are organized under six major headings:

- Establishing a comprehensive, adequate and representative system;
- Involvement of stakeholders
- Classifying marine protected areas;
- Managing the NRSMPA; and

coordinated policies on national and international Environment and conservation issues. ANZECC was replaced in 2001: Natural resource management matters were moved to the Natural Resource Management Ministerial Council (NRMMC); and Environmental protection matters were moved to Environmental Protection and Heritage Council (EPHC). See online:

<<http://www.deh.gov.au/about/councils/ephc/index.html>> (Accessed 9 July 2006)

⁶⁸ Strategic Plan of Action for the National Representative System of Marine Protected Areas: A Guide for Action by Australia Governments (ANZECC Task Force on Marine Protected Areas). Online at:

<<http://www.deh.gov.au/coasts/mpa/nrsmpa/pubs/spa.pdf>> (Accessed 9 July 2006)

- Performance assessment.

The establishment of NRSMPA helps to implement international and national agreements and strategies. It helps to meet Australia's responsibilities and obligations as a signatory to the Convention on Biological Diversity and the major components of the Jakarta Mandate developed under that Convention⁶⁹.

Australia signed the Convention on Biological Diversity on World Environment Day, 5 June 1992, at the Earth Summit in Rio de Janeiro and ratified it on 18 June 1993. It came into force on 29 December 1993. The Convention requires all Member States, among other things, to establish a system of protected areas and to develop guidelines for the selection establishment and management of protected areas.

The establishment of NRSMPA also contributes to the IUCN goal to develop of a Global Representative System of Marine Protected Areas.

For national agreements and strategies, the NRSMPA supports national commitments under the Inter-Governmental Agreement on the Environment (1992). This agreement made a commitment by Governments to develop a strategic planning approach to the marine Environment, with the establishment of representative marine protected areas as a key component of the commitment. The national commitments under the Agreement are implemented through national actions and strategies such as:

- The National Strategy for Ecological Sustainable Development (1992); and
- The National Strategy for the Conservation of Australia's Biological Diversity (1996).

The goal of Australia's National Strategy for Ecological Sustainable Development is "development that improves the quality of life, both now and in the future, in a way that

⁶⁹The Jakarta Mandate consists of recommendations on Scientific, Technical and Technological aspects of the Conservation and Sustainable Use of Marine and Coastal Biological Diversity (1995) Doc. UNEP/CBD/COP/2/5 at 34-43, and Decision 11/10 Doc UNEP/CBD/COP/2/19, 30 November 1995, adopted respectively by the Subsidiary Body the Convention of Biological Diversity, 1992.

maintains the ecological processes on which life depends⁷⁰’. One of its core objectives relating to MPAs is to protect biological diversity and maintain essential ecological processes and life-support systems. For the National Strategy for the Conservation of Australia’s Biological Diversity, the main goals are to protect biological diversity and to maintain ecological processes and systems.

4.6 Integrated Coastal Zone Management Initiatives

The integrated coastal management (ICM) can be defined as continuous and dynamic process by which decisions are made for the sustainable use, development, and protection of coastal and marine areas and resources⁷¹. ICM initiatives started in the United States of America in 1970⁷². Since then, they have practiced in many States world-wide.

In October 2003, the Australia Natural Resource Management Ministerial Council (NRMMC) endorsed the framework for National Cooperative Approach to Integrated Coastal Zone Management. The framework was developed to protect coastal and estuarine water quality, coastal biodiversity and the economic base of coastal areas around Australia.

The Framework for National Cooperative Approach to Integrated Coastal Zone Management establishes a framework for national cooperation in managing coastal issues and achieving ecologically sustainable development outcomes in the coastal zone. It has been developed in consultation with key stakeholders and has the support of the Australian Government, State and Territory jurisdictions.

⁷⁰ National Strategy for Ecologically Sustainable Development 1992.

Online: <<http://www.Deh.gov.au/esd/national/nsesd/strategy/index.html>> (Accessed 9 July 2006)

⁷¹ Cicin-Sain Biliana: Integrated Coastal and Ocean Management, Concept and practices. (Center for study of marine policy Graduate College of Marine Studies University of Delaware 1998), pp 517.

⁷² Chua, T.-E. 1995. *Integrated Coastal Zone Management: Southeast Asian experience*, p.7-17. In O. Linden, ed. Workshop and Policy Conference on Integrated Coastal Zone Management in Eastern Africa including the Island States. Coastal Management Centre (CMC) Conference Proceedings pp 1, 371 Metro Manila, Philippines.

The Australia Governments have a responsibility and interest in the coastal zone and recognize the importance of ICZM as a tool for managing challenges that are of national scale and scope. Governments are working cooperatively to ensure effective and complementary arrangements within and across jurisdictions, and to better reflect the interests of coastal stakeholders including individuals, community groups, Indigenous communities, business and trade.

Ongoing ICZM management efforts contribute to the ecologically sustainable outcomes, the commitment of Governments to a nationally cooperative approach to coastal issues, provide a strategic tool for guiding national, state, regional and local coastal zone outcomes and add values to the ongoing initiatives.

The fundamental goal of ICZM is to maintain, restore or improve the quality of coastal ecosystems and the societies they support. A defining feature of ICZM is that it seeks to address both development and conservation needs within geographically specific place. While jurisdictions have different legislative and administrative frameworks for managing the coastal zones, adopting a national cooperative approach seeks to address cross border and sectoral issues, harmonize joint action towards management of common issues and encourage investments from all jurisdictions.

5.0 THE NEED FOR TANZANIA TO DEVELOP A GOOD NETWORK OF MARINE PROTECTED AREAS

United Republic of Tanzania comprises the mainland Tanzania and Zanzibar (Unguja and Pemba islands offshore). The union creates a unique political situation since under the Union Constitution Zanzibar retains a wide range of autonomy in most areas of Government. The Revolutionary Government of Zanzibar deals with matters concerning Zanzibar, whereas the Union Government deals with those in respect to the Tanzania mainland.

Tanzania's marine jurisdiction comprises the⁷³: Continental shelf which covers an estimated 17,900 km²; the Territorial Sea which covers 37,000 km²; and the EEZ which extends to 200 NM from the baseline, or to an equidistant line with neighboring States (Kenya and Mozambique) as defined under the United Nations Convention on the Law of the Sea. It covers approximately 200, 000 km².

Tanzania's territorial seas are under constant threat from pollution, over-fishing, and destructive developments. By 2005, about 1,380 km² of the sea around Tanzania and Zanzibar had some form of protection. Pressure on this ecosystem threatens the long-term livelihood of the people that inhabit the State's coastal districts⁷⁴.

The coastal population of Tanzania counts for about 23 percent of the national population and is mostly concentrated in the urban areas of Tanga, Zanzibar, Dar es Salaam and Mtwara. In the urban areas, rapid population growth combined with poor management of coastal areas has led to the rapid and extreme degradation of coral reefs, shoreline change, and deforestation⁷⁵. In the vicinity of high population areas, shallow reefs are

⁷³ United Republic of Tanzania: Territorial Sea and Exclusive Economic Zone Act (1989)

⁷⁴ Ruitenbeek *et al*, 2005 Blueprint 2050: Sustaining the Marine Environment in Mainland Tanzania and Zanzibar. IBRD/ World Bank, Washington DC pp 125.

⁷⁵ Tanzania Coastal Management Partnership. Tanzania State of the Coast Report: The National ICZM Strategy and prospects for poverty reduction 2003. pp 62.

almost completely destroyed⁷⁶. The large urban demand for resources from the coast also exerts pressure on the natural Environment along the entire coast.

Protection of coastal and marine resources is a policy priority in both Tanzania mainland and Zanzibar. Concern with growing and cumulative threats to coastal and marine resources and degradation of the coastal Environment led to the establishment of the Marine Parks and Reserve Unit (MPRU) in 1994, under the Ministry of Natural Resource and Tourism. MPRU has a mandate to establish and ensure sustainable conservation for areas of outstanding marine ecological importance and to manage them in partnership with coastal communities and other stakeholders on mainland Tanzania⁷⁷.

Tanzania has signed and ratified many international conventions relevant to marine and coastal protection including UNCLOS, the Convention on International Trade in Endangered Species¹⁹⁷³ (CITES) and the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the East African Region and its related protocols, including the Protocol Concerning Protected Areas and Wild Fauna and Flora in the East Africa Region, and the Protocol Concerning Co-operation in Combating Marine Pollution in Cases of Emergency in the East African Region.

The principle objective of the Nairobi Convention is to establish close cooperation to protect and improve the state of wild fauna and flora and natural habitats in the Region through the establishment of specially protected areas in the marine and coastal Environment. Article 10 of the Nairobi Convention requires “all the Contracting Parties to take appropriate measures to protect and preserve rare or fragile ecosystems as well as rare, depleted, threatened or endangered species and their habitats”.

⁷⁶ Wagner, *et al.* 2001 Restoration of coral reefs and mangrove ecosystems at Kunduchi and Mbwani, Dar es salaam, with community participation. In: Richmond, M.D. and Francis, J.(eds.), *Marine Science Development in Tanzania and Eastern Africa. Proceeding of the 20th Anniversary Conference on Advances in Marine Sciences in Tanzania, 28 June – 1 July 1999, Zanzibar, Tanzania.* IMS and WIOMSA Zanzibar

⁷⁷ United Republic of Tanzania 1994: The Marine Parks and Reserves Act No 29, 1994

In the draft National Strategy for Growth and Reduction of Poverty Policy makers in Tanzania outline the following targets⁷⁸:

High quality of livelihood:

- By ensuring equitable access to quality primary and secondary education for boys and girls, universal literacy among men and women and expansion of higher, technical and vocational education;
- By improving survival, health and well-being of all children and women and of specially vulnerable groups;
- By ensuring access to clean, affordable and safe water, sanitation, decent shelter and a safe and sustainable environment and thereby, reduced vulnerability from environmental risk;
- By providing adequate social protection and basic needs and services for the vulnerable and needy;
- By introducing and emphasising effective systems to ensure universal access to quality and affordable public services

Good governance and the rule of the law:

- By ensuring that structures and systems of governance as well as the rule of law are democratic, participatory, representative, accountable and inclusive;
- By ensuring equitable allocation of public resources with corruption effectively addressed;
- By emphasising effective public service framework in place to provide foundation for service delivery improvements and poverty reduction;
- By emphasising and ensuring rights of the poor and vulnerable groups are protected and promoted in the justice system;
- By reduction of political and social exclusion and intolerance;
- By improving personal and material security, reduced crime, elimination of sexual abuse and domestic violence; and

⁷⁸ United Republic of Tanzania 1998: National Strategy for Growth and Reduction of Poverty. See online: <http://www.tanzania.gov.tz/vission_2025f.html> (Accessed 15 July 2006)

- By ensuring that national cultural identities are enhanced and promoted

Strong and competitive economy:

- By ensuring sound economic management;
- By promoting sustainable and broad-based growth;
- By improving food availability and accessibility;
- By reducing income poverty for both men and women in rural areas;
- By reducing income poverty of both men and women in urban areas;
- By providing reliable and affordable energy to consumers

These, combined with the UN's 2015 Millennium Development Goals⁷⁹, can be achieved and maintained only through sustainable use of Tanzania's natural resources, including its marine resources.

Tanzania needs to establish a network of MPAs as the path to success in sustaining the critical balance between use and conservation. At the September 2003 World Parks Congress in Durban, Tanzania announced its intention to increase protection of its seas to 10 percent by 2012, and 20 percent by 2025⁸⁰.

To fulfill this commitment, and other international and national commitments on coastal and marine protection and conservation, such as the JPOI, the CBD, NEPAD, and the Nairobi Convention 1985, the establishment of a network of MPAs is critical and direct relevance.

⁷⁹ See the UN 2015 Millennium Development Goal online: <http://www.un.org/millenniumgoals> (Accessed 15 July 2006)

⁸⁰ Ruitenbeek, J, Hewawasam, I, and Ngoile, M, *Blueprint 2050: Sustaining the Marine Environment in Mainland Tanzania and Zanzibar* 2005. IBRD/ World Bank, Washington, DC. pp 125.

5.1 Legislation and Institutional Arrangements

The Environmental issues are not union matters in Tanzania, therefore mainland Tanzania and Zanzibar each have considerable legislation and institutions allowing for the establishment and the management of protected areas.

The principle legislation for MPAs in mainland Tanzania is the Marine Parks and Reserve Act 1994, which allows for the establishment of three types of MPAs: Marine Parks, Marine Reserves and National Parks containing marine habitats.

The management authorities for mainland Tanzania Marine Parks and Reserves include:

- The Ministry of Natural Resources and Tourism;
- The Board of Trustees, Marine Parks and Reserves;
- The Marine Parks and Reserves Unity, under the manager;
- Advisory Committees of individual marine parks; and
- The park management of individual marine parks under warden.

In Zanzibar, the protected areas are established under three pieces of legislation:

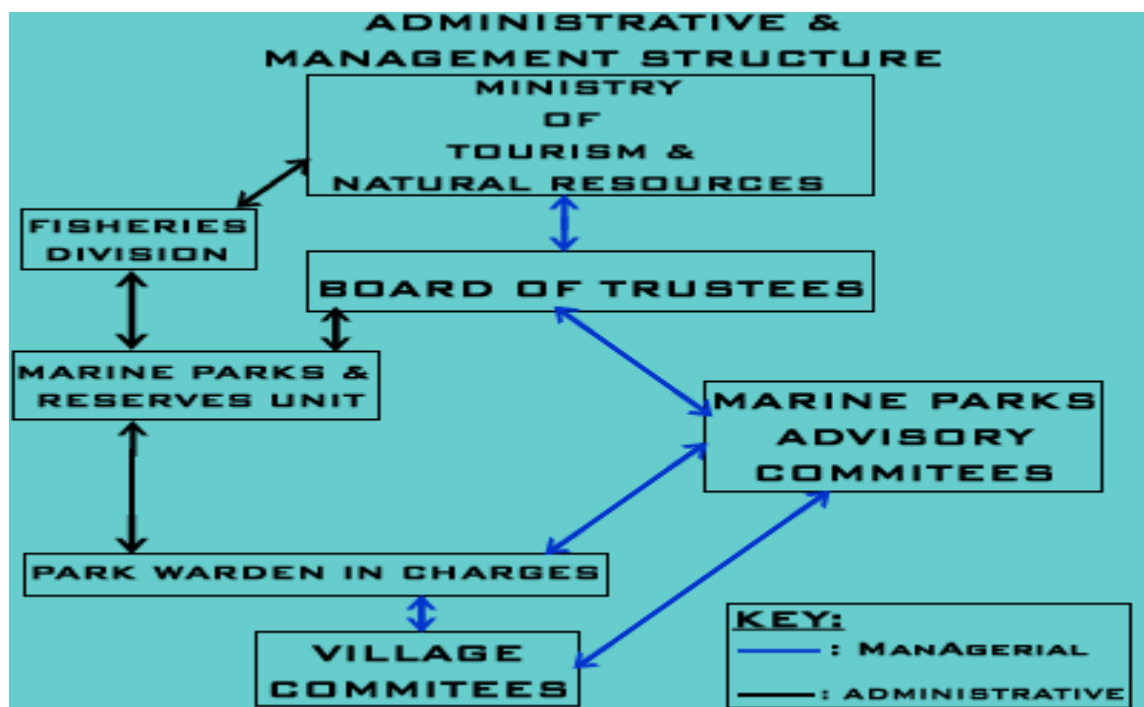
- Environmental Management for Sustainable Development Act 1996;
- Forest Resource Management Act 1996; and
- Fisheries Act 1988.

The overall mandate for protected areas in Zanzibar lies within the Ministry of Agriculture, Natural Resources, Environment and Co-operatives (MANREC).

The MPAs established under the Environmental Management for Sustainable Development Act 1996, and the Forest Resource Management Act 1996, fall under the mandate of the Department of Commercial Crops, Fruits and Forestry (DCCFF) and include: Jozani National Park (established in 2004), Ngezi Forest Nature Reserve (Proposed) and Jozani Forestry Reserve (gazetted in 1996).

The marine protected areas established under the Fisheries Act of 1988 fall under the mandate of the Department of Fisheries and Marine Products (DFMP), and include: Chumbe Island (1994), Kiwengwa controlled area (established in 2000) but was never managed, Mnemba Island Marine Conservation Area (MIMCA) gazetted in 2002, Menai Bay Conservation Area gazetted in 1997, and Misali Island Marine Conservation Area gazetted in 1998.

Figure 6: Tanzania MPAs Administration and Management Structure



Source: Marine Parks and Reserve, Tanzania. <<http://www.marineparktz.com/index01.htm>>

5.2 Tanzania's Policies and Strategies for the Protection and Conservation of the Marine Environment

Tanzania has a range of policies and strategies which are of potential relevance to the protection and conservation of marine ecosystems, these includes: Fisheries Policy and Strategy, 1997; National Land Policy, 1995; National Environment Policy, 1997; Tanzania State of the Coast, People and Environment, 2001; and National Integrated Coastal Environment Management Strategy, 2003.

These policies and strategies reflect common themes that respond to Agenda 21 by supporting integrated resource management and balance between sustainable development and Environmental protection.

National Land Policy (1995)

The land policy calls for greater protection of sensitive areas, such as mangrove areas and marshlands, which are to be protected for public benefits. Accordingly, hotel and home construction is to be regulated to protect coastline, erosion and public access.

Fisheries Policy and Strategy (1997)

The overall goal of the Fisheries Policy is to promote conservation, development and sustainable management of the fisheries resources for the benefit of present and future generations. The objectives of the Fisheries Policy relevant to MPAs are outlined in Policy statements 6 to 8:

- To encourage and support all initiatives leading to the protection and sustainable use of the fish stock and aquatic resources;
- To integrate conservation and sustainable utilization of the fisheries resources into the social economic programmes of the community; and
- To protect the productivity and biological diversity of coastal and aquatic ecosystems through prevention of habitat destruction, pollution and over exploitation.

National Environment Policy (1997)

The National Environment Policy objectives relating to coastal and marine protection include:

- Ensuring sustainability, security and equitable use of resources for meeting the basic need of the present and future generations;
- Conserving and enhancing natural man made heritage, including the biological diversity of unique ecosystems;

- Raising awareness and understanding of the essential linkages between Environment and development, and promote individual and community participation in Environmental action; and
- Promoting international cooperation on the Environmental agenda, and to expand participation and contribution to relevant bilateral, sub-regional and global organization and programmes , including implementation of treaties.

National Integrated Coastal Environment Management Strategy (2003)

The National Integrated Coastal Management Strategy stresses the need “to preserve, protect and develop the resources of Tanzania’s coast for use by the people of today and for succeeding generations”.⁸¹

The Strategy offers an opportunity for the coordination of marine parks, conservation areas and reserves with a broader policy framework focused on the conservation of natural resources, on ensuring food security, and on supporting poverty alleviation and economic growth.

The goal of the Strategy is to implement the National Environment Policy and other related policies in conserving, protecting and developing the natural resources of Tanzania’s coast for the use by present and future generations, to ensure food security and to support economic growth⁸². The Strategy calls for, among other things, integrated coastal resources management at local and community level, establishment of marine protected areas and community-based management of resources, ICZM action planning, conservation and restoration of critical habitats and areas of high biodiversity while ensuring that the coastal people continue benefiting from the sustainable use of the resources, and most important, building the capacity of both human and institution for managing the coastal in an integrated manner.

⁸¹ The United Republic of Tanzania: National Integrated Coastal Environment Management Strategy (2003) Page 4.

⁸² The United Republic of Tanzania National Integrated Coastal Environment Management Strategy (2003) Page 6.

Tanzania State of the Coast, People and Environment Report 2001

Tanzania State of the Coast, People and Environment report highlights the status, issues and threats to the coastal and marine Environment and the direct and indirect links to human welfare essential for policy decisions to manage natural resources in a sustainable and effective manner.

Protected areas in Zanzibar are considered to be an essential element in the implementation of both the National Environment Policy (1991) and the Forest Policy. A National Protected Area Board was established in 2002 in Zanzibar under the Environmental Management for Sustainable Development Act to coordinate the designation and management of the national protected area systems.

5.3 World Heritage Sites

Tanzania is a signatory to the World Heritage Convention and ratified it on 2 August 1977. There are seven Tanzanian World Heritage sites on the World Heritage list, but only one, the ruins of Kilwa Kisiwani and Songo Mnara, is of relevance to marine conservation. The ruins of Kilwa Kisiwani and Songo Mnara were inscribed on the World Heritage list in 1981. Kilwa Kisiwani and Songo Mnara are two islands situated close to each other about 280 kilometers off the Tanzania coast to the south of Dar es salaam. A complex of ruins has been preserved on each island and both complexes are presently under the protection of the Government of the Republic of Tanzania.

Kilwa is important in having many islands, mostly sand and resting on Pleistocene coral platform, surrounded by fringing reefs seaward and extensive patch reef formation on all remaining sides. The fringing coral reefs flank the coastline and form an additional chain of small islands. Most of the coral reefs are pristine and rich in marine biodiversity. The sandy islands are also important breeding sites for sea-turtles. All five sea turtle species resident in Tanzania waters are present in Kilwa, which include the Hawksbill turtle (*Eretmochelys imbricata*), Green turtle (*Chelonia mydas*), Leatherback turtle

(*Dermochelys coriacea*), Loggerhead turtle (*Caretta caretta*), and the Olive Ridley turtle (*Lepidochelys olivacea*).

The presence of dolphins and whales close to inshore bodes well for tourism development. The mangrove forests, intertidal flats, rocky cliffs and various islands provide perfect habitats for roosting, feeding and breeding for waterfowls and other migratory species.

Among other monuments, the ruins comprise:

- The vestiges of the great mosque, constructed in the 12th century of coral tiles embedded in a core of puddle clay;
- Remains of the Husuni kubwa palace built between c.1310 and 1333;
- Numerous mosques;
- A prison constructed on the ruins of the portuguese fortress; and
- An entire urban complex with houses, a public square and fence walls.

The sites were inscribed on the list of World Heritage in Danger in 2004. There is a serious rapid deterioration of the archaeological and monumental heritage of these islands due to various agents such as erosion, vegetation and lack of public awareness. The vast majority of Tanzanians and particularly the local populations living in and around the sites are generally ignorant of the potential commercial values of the sites with respect to tourism.

5.4 Network of MPAs in Tanzania

Tanzania is making efforts to fulfill its commitment to increase protection of its seas to 10% by 2012, and 20% by 2025. The Government of Tanzania is initiating the Marine and Coastal Environment Management Project with the aim to support marine and nearshore policy reforms and policy implementation to improve the quality of life of coastal populations and maintain the integrity of coastal and marine resources of national

and international significance. An important addition to achieve the 10% and 20% goals will be the development of a network of MPAs.

The East African Marine Ecoregion (EAME) programme is a Worldwide Fund for Nature (WWF) led initiative to develop a long-term “50 year conservation vision” and strategic plan for the sustainable management of this region’s marine resources. As part of its work, key sites for biodiversity conservation have already been identified. The identification process used four key habitats/community groups to assess the relative importance of different areas considers:

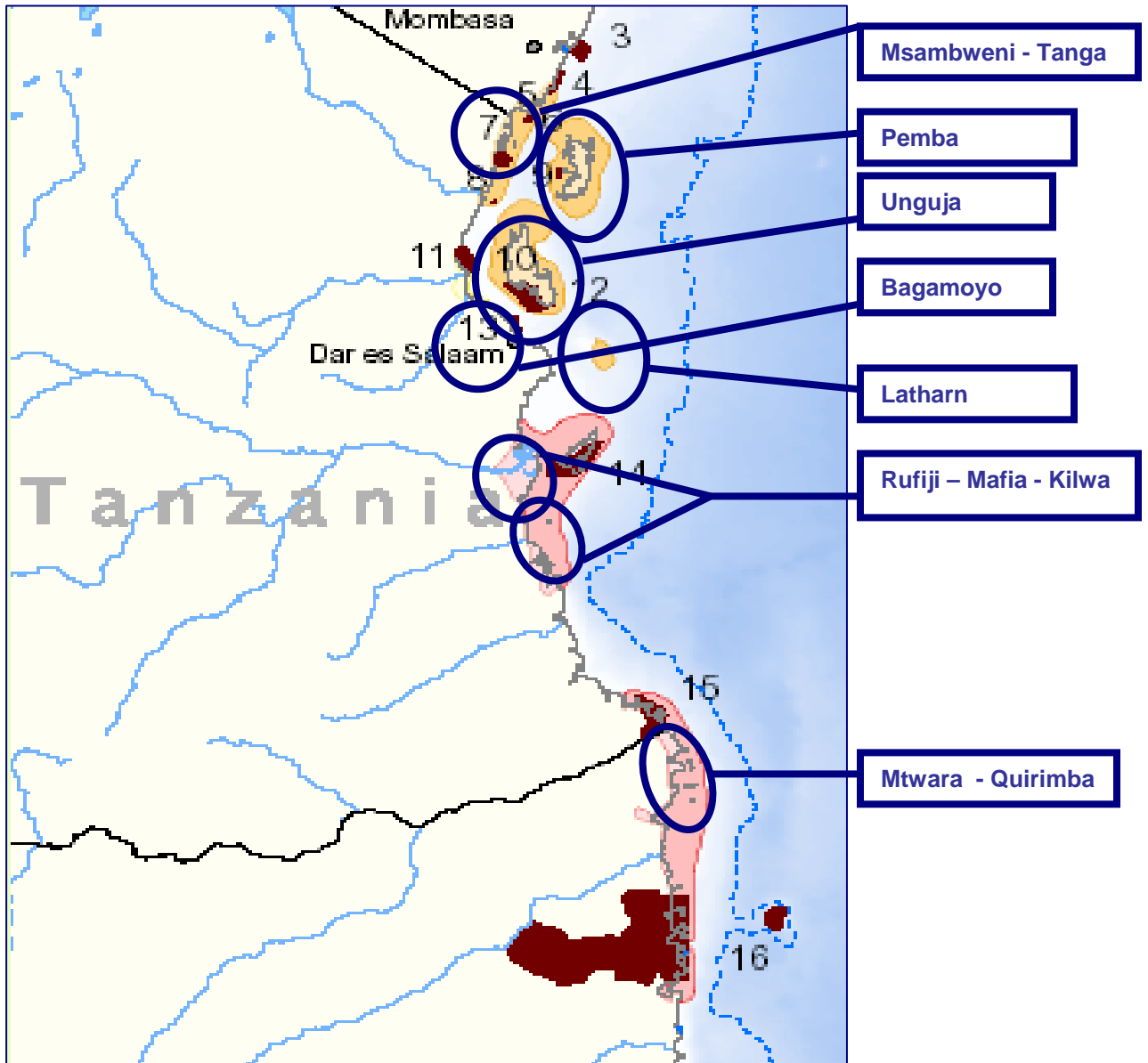
- Coral communities and associated fauna;
- Mangrove communities;
- Sea grass, algae and sponge communities; and
- Wetlands, coastal lakes, inland pools, sandy shores and dunes.

When examining these groups, EAME identified seven priority seascapes in Tanzania. Four are on the mainland: Msambweni-Tanga; Bagamoyo; Rufiji-Mafia Complex; and Mtwara-Quirimba. The other three comprise Unguja, Pemba and Latham Island offshore. The Rufiji and Mtwara areas are considered globally important, while the remainder are ecoregionally or sub-regionally important.

All of these areas, except Latham Island, enjoy some level of protection:

- Both globally important areas have MPAs, covering 7% of the seascape in the case of Mafia and 2% in the case of Mnazi Bay (in the Mtwara complex). The latter is transboundary seascape with Mozambique.
- Of the three ecoregionally important areas with MPAs, Misali protects 0.5% of the Pemba priority seascape; MPAs on Unguja cover about 8.7%; and the closed areas within the collaborative fishery management areas contribute about 1% to protection of the Tanga seascape; and
- Bagamoyo is a subregionally important priority area, and will receive about 8% protection when the Saadan National Park marine portion is established.

Figure 7: EAME Priority Seascapes in Tanzania



Source: University of Dar es Salaam

5.5 Integrated Coastal Zone Management

Integrated Coastal Zone Management was initiated in Tanzania in 1993, during a workshop and policy conference on ICZM in Arusha. During this workshop and conference, high-level Government officials and experts from the region (Tanzania, Madagascar, Mauritius, Mozambique, and Seychelles) participated and made recommendations and resolutions that were adopted by the policy conference⁸³.

The reasons for ICZM establishment in the region included the following issues: growth of population and expanding economic development that was, and continues to threaten the functional integrity of natural coastal systems. This has led to high destruction of valuable coastal forests including mangrove wetlands, overexploitation of inshore fisheries, indiscriminate use of coral reef resources and inadequate economic development planning, consequently declining productivity, pollution and degradation of Environmental quality. These have negative impacts on the livelihoods of current and future generations of coastal inhabitants⁸⁴.

Since the 1993 workshop and policy conference was held several coastal management programmes have been established in Tanzania, including the Tanga Coastal Zone Conservation and Development Programme, Rural Integrated Project in Lindi and Mtwara, Rufiji Environment Management Project, Kinondoni Integrated Coastal Area Management Project and Marine Protected Areas.

In linking the above initiatives, the Government of Tanzania has established the Tanzania Coastal Management Partnership (TCMP) through the National Environment Management Council (NEMC) and in collaboration with the United States Agency for International Development (USAID) and with funding provided through the University of Rhode Island/Coastal Resources Centre. Through this, NEMC elaborated the National ICZM Strategy.

⁸³ Linden, O. (ed.) Workshop and Policy Conference on Integrated Coastal Zone Management in Eastern Africa including the Island States Coastal Management Centre (CMC) Conf. Proc (1995) pp 1,371

⁸⁴ *Ibid*

For the sustainability of the ICZM, it insists on the participation of important stakeholders from the national to local levels, and internalizing ICZM into their daily activities. In the implementation of ICZM, the National Steering Committee on Integrated Coastal Management has been formed, and an Integrated Coastal Management Unit (ICMU) is in the process of being established within NEMC.

The specific responsibilities of the National Steering Committee include:

- Providing policy guidance to the ICMU on program priorities and endorse formation of issues specific working groups;
- Providing guidance to the ICMU on areas requiring special area management plans;
- Reviewing and endorsing District ICM Action Plans; and
- Facilitating the resolution of Intesectoral conflict and conflict between national and local entities related to ICM issues.

Members of the National Steering Committee include:

- The Permanent Secretary responsible for Environment;
- the Director General of NEMC;
- Director of Department of Environment;
- Nine members from Central Government shall be drawn from the following sectors, Fisheries, Forest, Tourism, Agriculture, Mining and Land and human settlement;
- Three coastal district representatives;
- One member from private sector; and
- One member from non Governmental organization.

The responsibilities of the ICMU will include:

- Coordinating and facilitating the implementation of National ICM Strategy
- Advising the Director General of NEMC, during the formulation and review of initiatives related to Integrated Coastal Management; and

- To serve as the backbone of a national ICM network where practitioners (local and national) can easily exchange information and ideas.

Through the present section, it is clear that ICM in Tanzania should manage multiple uses of the coastal and marine environment so that a wide range of needs may be catered for, including both biodiversity protection and sustainable use, and so that all stakeholders (including government, NGOs, different economic sectors, and local communities) participate and benefit. ICM programmes should focus on co-ordinating bodies or committees comprising representatives of all sectors involved in coastal development. Regular meetings should be held to ensure that information is exchanged on sectoral development issues, so that appropriate collaborative initiatives can be undertaken. Representatives of MPA management agencies or of the MPAs themselves (depending on the level of the committee) should participate in these co-ordinating mechanisms. ICM regulatory mechanisms should then be brought in to address activities that might have negative impacts on the MPA and over which the MPA has no control. ICM initiatives can thus assist with the management of many impacts that originate outside an MPA's boundaries, such as:

- Pollution (wastewater, toxic chemicals, sewage) from industrial and domestic point sources and discharges;
- Agricultural run-off that might cause nutrient enrichment and/or increased turbidity;
- Pollution caused by solid waste from various sources including municipal dumps;
- Mining in coastal areas or upstream of rivers that influence the MPA;
- Coastal developments, whether industrial, urban, residential or tourism;
- Promotion of effective implementation of EIA; and
- Watershed and river basin development activities that may affect coastal waters.

ICM programmes should also be able to play a useful facilitating role in cases where there is lack of harmony between national legislation for sectors such as fisheries or forestry, and that for MPAs.

6.0 COMPARISON ON THE MANAGEMENT OF MARINE ENVIRONMENTS IN AUSTRALIA AND TANZANIA AND RECOMMENDATIONS

6.1 Policy issues

In contrast with Australia who has an Oceans Policy, Tanzania has no specific Ocean Policy but a range of policies that are relevant to the protection and conservation of marine ecosystems. Although these policies play a part in marine and coastal conservation as outlined in Section 5.2 above Tanzania could develop a national ocean policy to serve as an overall framework and so as to ensure effective, efficient and coherent ocean management. Such a national ocean policy would promote coordination among Government agencies concerned with the use of ocean and its resources and would maximize benefits from utilization of these resources within sustainable limits.

Australia provides a good example to demonstrate the importance of an ocean policy as the key to achieve adequate management of ocean and seas under national jurisdiction. Australia's Oceans Policy establishes the framework for integrated and ecosystem-based planning and management for the marine jurisdiction. It also has led to the development of the Regional Marine Plans based on large marine ecosystems for the purpose of integrating ocean planning and management along ecosystemic lines.

For Tanzania to develop an ocean policy, some lessons can be learned from the Australian approach, including:

- The goals of the ocean policy should be identified and the ways to achieve those goals should be mapped out;
- The process of public consultation should be established in order to involve the community and stakeholders in both planning and implementation;
- For developing an integrated system of ocean management, special geographical areas based on marine ecosystem should be established;
- There should be a Government institution leading the policy development process; and
- For effective implementation of ocean policy, clear institutional arrangements, including a number of administrative bodies should be established.

6.2 National Representative System of Marine Protected Areas

Australia has the largest number of MPAs of any State in the world and has developed a significant national representative system of MPAs. Australia's national representative system has been established through national legislation and cooperative agreements between the Commonwealth and the States. In addition, Australia has adopted a uniform zoning system so that all MPAs can be designated and managed based on the same criteria and approaches, thus allowing for consistency and facilitating management.

In contrast, Tanzania has only two marine parks (Mafia Island and Mnazi Bay-Ruvuma Estuary Marine Parks) and a few marine reserves. Compared to Australia, Tanzania lacks a national system of MPAs or marine reserves. Unlike the system in Australia, in Tanzania there is currently no single framework that provides consistency in designating and managing MPAs. Rather MPAs in Tanzania are designated and managed through different systems on the mainland and in Zanzibar.

Tanzania should examine Australia's national representative system of MPAs as a successful model for establishing its own national representative system of MPAs and marine reserves. It should also adopt a uniform zoning system for MPAs similar to that used by Australia in order to provide consistent management between and among different MPAs. Australia has adopted the zoning classification system developed by IUCN⁸⁵. As described previously, there are six IUCN categories, ranging from completely protected to multiple-use. Based on the primary management objective of the MPA, Australia assigns each MPA to one of the six categories. Adoption of the IUCN categories provides consistency in the designation and management of MPAs, and assists with evaluation of the adequacy and effectiveness of the NRSMPA.

⁸⁵ Department of the Environment and Heritage. About Australian Marine Protected Areas. online at: <http://www.deh.gov.au/coasts/mpa/about/australian.html> (Accessed August 14, 2006)

How should Tanzania develop a National Representative system of MPAs?

Tanzania should incorporate the four key characteristics of Australia's MPAs within the NRSMPA system to develop its own national representative system of marine protected areas. The first characteristic is that the MPA must be classifiable into one or more of the IUCN categories⁸⁶. The MPA may incorporate zones ranging from highly protected to multiple-use. Secondly, the MPA must be designated specifically for the conservation of biodiversity⁸⁷. Thirdly, the MPA must have a secured status that can only be revoked through a specific Governmental process⁸⁸. Finally, the MPA must contribute to the representativeness, comprehensiveness or adequacy of the national system⁸⁹.

The above criteria would help to guide the development of an effective national representative system in Tanzania. The adoption of the IUCN categories would also provide a predictable and consistent management framework for all MPAs within the system. The requirement that MPAs be designated for biodiversity conservation instead of, or in addition to, cultural or other preservation would emphasize the importance of the national system to the protection of marine ecosystem functions, services, habitats and species.

Providing the MPA with a secure legal status that cannot be revoked except through a specific Governmental process ensures that the designations will be long lasting and less subject to political pressure, it also indicates that the creation of a national representative system is a top priority and the appropriate legal protections are being provided in a sufficient manner. The final requirement helps ensure that the national system effectively represents each type of ecosystem and that the system is comprehensive enough to offer benefits. These issues have not been addressed in the Tanzania setting. The MPAs are inadequate in their area of coverage and the concept of connectivity was not considered in their establishment.

⁸⁶ Australia & New Zealand Environment & Conservation Council Task Force on Marine Protected Areas, Guidelines for Establishing the National Representative System of Marine Protected Areas (1998).

[hereinafter Guidelines]

⁸⁷ *Ibid*

⁸⁸ *Ibid*

⁸⁹ *Ibid*

In addition to these general framework requirements, Tanzania should consider implementing the types of detailed guidelines used to develop the Australian NRSMPA. The Australian guidelines include the roles of the jurisdictions in the establishment of the NRSMPA and specific criteria for the identification and selection of MPAs to be used. In addition to the guidelines, detailed actions have been identified to achieve the goals of the NRSMPA, including identifying responsibility for each action and establishing a timetable for delivery of the actions.

The guidelines and criteria for establishing the NRSMPA should be used as a model for establishing the national representative system in Tanzania. Regardless of how the national representative system is implemented, the detailed procedures and cooperative management schemes adopted by Australia can be used as a model during the process

MPAs and a national MPA system or network, are essential components of ICM programmes at both national and local levels, as they provide the protection for the biodiversity and ecological processes on which human use of the coastal zone depends. Thus Tanzania should establish a national representative system of marine protected areas and the economic benefits and sustainable development role of MPAs should be clearly demonstrated and addressed through the management plan and day-to-day operations. MPA management should be co-ordinated and integrated with management activities outside its boundaries, and linked to local development programmes that are addressing the needs of local people. The links between MPAs and the surrounding environment, and the influences of activities on land on the MPAs, should be fully understood by all MPA personnel and all stakeholders and the management plans should address coastal management issues in the broadest sense. There should also be a clear understanding of the role that the MPA plays in sustainable coastal development.

6.3 MPAs legislation and institution arrangements

MPA legislation

In Tanzania, marine and terrestrial protected areas are covered by separate legislation, which are: Marine Parks and Reserves Act 1994 and the Wildlife Conservation Act 1974, respectively. This is different from the Australia approach, where a single Commonwealth regime for both marine and terrestrial protected areas exists: the Environmental Protection and Biodiversity Conservation Act 1999. The Act prohibits actions either in aquatic or terrestrial Environments that have, will have, or are likely to have, a significant impact on Environments. The integrated Australian approach seems preferable, because it recognizes the interdependent nature of terrestrial and aquatic Environments. Separate systems make it difficult to control activities occurring either on land or sea that have an adverse impact on the other medium, since it may prove legally impossible to use the legislation for one regime to protect an area outside its own jurisdiction. Therefore, since these ecosystems are largely interdependent Tanzania should adopt an integrated approach to the conservation and management of marine and terrestrial ecosystems.

Institutional arrangement

Currently, there is no single framework that can facilitate joint management of MPAs between the Tanzania mainland and Zanzibar. On the mainland, the Marine Parks and Reserves Unit under the Ministry of Natural Resources and Tourism is responsible for the establishment and management of MPAs, while in Zanzibar the same function is being carried out by the Ministry of Agriculture, Livestock and Natural Resources.

For better management of MPAs in Tanzania, there should be a single institution responsible for the establishment and management of MPAs at a national level, as is the case in Australia where the Commonwealth marine reserves are under the Director of National Parks. There should also be Government institutions in each coastal region responsible for managing MPAs in their jurisdiction, much like the States and Territories in Australia. The marine jurisdictions should be clearly demarcated for national and

regional levels. For example, in Australia the States and Territories have the marine jurisdiction up to three NM outwards from the low water mark, while the Commonwealth has jurisdiction from the limit of States/Territories to 200 NM.

6.4 Management issues

Natural resource utilization

The high dependency of poor coastal people in Tanzania on coastal and marine resources for livelihood and income generation causes severe degradation in coastal and marine Environments. Much of the degradation of reef ecosystems in Tanzania has been caused by destructive fishing methods⁹⁰.

Dynamite fishing has been practiced in Tanzania for over 40 years, it was once widespread, but its use has been reduced drastically throughout the State⁹¹. Each blast of dynamite instantly kills all fish and most other living organisms within a 15-20 m radius and completely destroys the reef habitat. The cumulative effect has been devastating, with numerous blasts occurring daily on the reefs of Tanzania over a period of many years.

The use of small mesh seine nets to capture fish on the sea floor and around reefs is as destructive as the use of dynamite. Dragging the nets over the reef unavoidably damages coral and other marine life. The use of small-mesh size seine nets results in the capture of many juvenile fish, and when conducted intensively in nursery areas results in the depletion of fish stocks, alteration of species composition, loss of species diversity, and disruption of food webs.

Although destructive fishing methods have been prohibited in Tanzania, people continue to use them due to competition for marine harvests and the lack of enforcement. In

⁹⁰ Australian Institute of Marine Science 2004: Status of Coral Reefs of the World. Volume 1 pp 301

⁹¹ Mohamed *et al*, 2002. Coral reef degradation in Tanzania: Results of Monitoring 1999-2002. In: Linden, O., Souter, D., Wilhelmsson, D. and Obura, D. (eds.), ‘‘Coral Reef Degradation in the Indian Ocean, Status Report 2002’’. CORDIO, Kalmar, Sweden: pages 21-30.

addition to destructive fishing methods, marine resources are also depleted by exploitation of intertidal resources such as the collection of shells and poaching of turtle eggs on the beaches⁹². In some areas of mainland Tanzania (especially the Rufiji delta area and Bagamoyo), the commercial shrimp trawling fishery degrades or destroys seagrass habitats, destroy marine turtles, and depletes fish stocks and diversity through incidental bycatch⁹³.

Coral mining is another highly destructive activity that is also widespread along the entire coast⁹⁴. Live and dead corals are extracted from reefs using pick axes, crowbars and other implements. The corals are brought ashore where they are piled into kilns and burned to produce lime for local buildings and trade. Other significant pressures on wood resources in the coastal area include mangrove and forest cutting for household cooking, charcoal production, building poles, and fuel-wood to produce lime from coral⁹⁵.

In contrast to Tanzania, Australia is seen as the world leader in protecting, conserving and managing coastal and marine Environments and biodiversity. This is brought about by several factors:

- Coastal people do not rely on coastal resources for their livelihood as compared to Tanzania, since they have a wide range of alternative income generating activities;
- A comparatively high level of development, stable economy and wealth allow for the protection of marine Environment, through Government allocation of enough funds for the conservation and management of coastal and marine Environment:
- Due to the high standard of living, coastal forests are not cleared for fire wood, charcoal production and timber as is done in most coastal areas in Tanzania; and

⁹² Muir, C E. and Abdallah, O. 2002. Community-based Marine Turtle and Dugong Research and Habitat Protection programme, Mafia Island. Progress Report

⁹³ Nhwani et al, 1993: Crustacea resource assessment in Rufiji and by-catch studies of prawn trawlers. Report commissioned by National Environment Management Council. Dar es Salaam.

⁹⁵ Akwilapo, F.D. 2001. The distribution and abundance of mangrove species and associated macrobenthos in ecosystems with varied anthropogenic degradation. M.Sc. thesis, University of Dar es Salaam

- Communities are committed to Environmental protection, since there enough awareness and conservation programs at all levels.

Thus, so as to ensure the sustainable utilization of those resources, the Tanzanian Government must develop supplementary and/or alternative sources of resources and income for its poor coastal people. For example, the use of electricity and gas as alternative sources of energy instead of fuel wood, and non-mangrove trees should be planted in coastal areas in order to relieve future pressure on mangroves for building poles and firewood. The Government should advise people to seek alternative occupations such as seaweed farming, aquaculture and livestock keeping instead of relying on fishing. Beekeeping, ecotourism and cultural tourism are other opportunities that should be developed as economic activities. There should be constant vigilance for unsustainable fishing practices and the Government should provide recommended fishing gears to fishermen. The Government should allocate enough funds for conservation and management of coastal and marine environment, and public education and awareness campaigns must be conducted at all levels to raise and improve the general public's knowledge on the conservation and management of coastal and marine environment.

Gap in Tanzania Marine Resource Use Legislation

One gap in the existing structure relates to the role of traditional use rights. In some marine areas along the coast there are traditional or customary usage rights practiced by coastal communities. Communities have customary laws and practices that bestow them with ownership rights that exclude outsiders. Because these practices were established over the years, they are critical considerations that need to be reflected in the law to encourage better management, and voluntary enforcement of the laws. Customary laws or practices, if consistent with the MPA laws may also form the basis for community support for MPAs.

The existing legislation for MPAs in Tanzania provides inadequate recognition and attention to traditional use rights. Currently, the fisheries laws and the Marine Park and Reserve Act do not make provisions for the recognition of customary laws and practices.

This is one of the gaps in the legislation that need to be addressed through the amending of Tanzanian legislation to provide greater recognition of customary laws and practices.

Legal requirement at the local level

At the local level, the pressing issue is defining a 'community marine area'. Tanzania's legislation provides for increased jurisdictional control by districts, villages, and other local institutions. But the problem remains that marine resources are all in the sea, while most of the experience and legislation deals with terrestrial resources. For example, there is a Forest Act, Land tenure Act, and Village Land Act, but there is no similar legislation for communal seas. Tanzania should demarcate its ocean in specific jurisdictions, for example in Australia the three nautical miles is for States and Territories and from the limit of States/Territory to 200 nautical miles is for Commonwealth Government. Tanzania should clarify and entrench the rights and responsibilities of coastal communities by establishing a community territorial sea, with explicit management rights conferred to coastal districts.

6.5 World heritage sites

In contrast to Australia, Tanzania has a small number of World Heritage sites, particularly marine sites. The Government of Tanzania should make effort to meet its obligation and responsibility with respect to the World Heritage Convention to identify more sites, delineate, protect and conserve them so that they can be transmitted to future generations.

Tanzania should draw lessons from the Australian experience on identifying, protecting and conserving World Heritage sites. The Government should ensure that appropriate legal, institution and financial arrangements are established for better development and management of World Heritage sites. There should be an institution responsible for protection and conservation of world heritage sites. This should be responsible for developing and implementing national policy and programs to protect and conserve heritage sites. There should be strong strategies for the management, protection and

conservation of World Heritage sites, particularly the ruins of Kilwa Kisiwani and Songo Mnara that have been inscribed in a list of World Heritage sites in danger.

6.6 Information sharing for effective management of coastal and marine Environments

Effective management of coastal and marine Environments requires Environmental managers and policy makers to have access to diverse types of information and data, including social, cultural, economic, ecological, biological and geophysical.

How did Australia manage to have enough information on the ecology of marine and coastal Environment?

A number of Australian Government initiatives aim to ensure that users of data are able to access consistent datasets to meet their requirements, even though the data is collected and maintained by different authorities. These initiatives include⁹⁶:

- The delivery of an Australian Spatial Data Infrastructure (ASDI), this provides a vehicle for researchers to display and distribute research results, data and scientific tools;
- The implementation of an internet-based oceans portal to provide views into a wide range of ecological and human-use information held at various national agencies across both Australian and State/Territory Government jurisdiction; and
- The global census of marine life program called the Ocean Biogeographic Information system, which allows Australian researchers, policy makers and managers to access biodiversity data collected in the world's oceans by other nations.

In addition to this, the Australia Environment Resource Information Network (ERIN) is a national facility which collates, coordinates and makes Environmental information public, and provides analytical tools for interpreting information for policy developers and decision makers.

⁹⁶ Commonwealth Australia: National Cooperative Approach to Integrated Coastal Zone Management. Framework and Implementation Plan 2006 page 45.

In Tanzania, the lack of information on the ecology of the marine and coastal Environment and of the areas most critical for maintaining ecosystems processes remains a challenge to implementing an MPA system. In the near-term, a priority is to collect relevant information that is currently lodged with a range of Government agencies, academic institutions, NGOs, and projects; and to ensure that there is some means of sharing and using it for the benefit of all. Therefore, the Tanzania Government should establish a national facility system to collect relevant and sufficient data on the marine and coastal Environment and to analyze and share this data with all concerned.

7. CONCLUSION

Since the marine protected areas provide various benefits for the State, Tanzania should put more emphasis in the establishment of new protected areas and improve the management, conservation and protection of the existing ones.

Tanzania should establish a national representative system of marine protected areas as the path to success in sustaining the critical balance between use and conservation of coastal and marine resources. An Integrated Coastal Management Unit should identify critical coastal areas and areas of high biodiversity that should be included within existing or new protected area programs. Areas and their bounds should be identified through a consultative process that includes input from local and national government, NGOs and resource users.

The national coastal program should work with the Marine Park and Reserves Unit to establish new marine protected areas in areas with significant biodiversity and where local communities support the concept of a park.

Annex 1: Marine Protected Areas that are Commonwealth reserves

Marine protected area	Year declared	Total area (ha)	IUCN Category	Area (ha)
Ashmore Reef Natural Nature Reserve	1983	58,300	Ia II	55,000 3,300
Cartier Island Marine Reserve	2000	17,200	Ia	17,200
Coringa –Herald National Nature Reserve	1982	885,000	Ia	885,000
Elizabeth and Middleton Reefs National Nature Reserve	1987	188,000	Decision pending	188,000
Great Australian Bight Marine Park	1998	1,940,000	VI	1,940,000
Heard Island and MacDonal Islands Marine Reserves	2002	6,460,000	Ia	6,460,000
Lihou Reef National Nature Reserve	1982	843,000	Ia	843,000
Lord Howe Island Marine Park	2000	300,000	IV Ia	204,000 96,000
Macquarie Island Marine Park	1999	16,200,000	Ia IV	5,700,000 10,500,000
Mermaid Reef Marine National Nature Reserve	1991	54,000	Ia	54,000
Ningaroo Marine Park	1987	244,000	II	244,000
Solitary Island Marine Reserve	1993	15,680	Ia IV VI	80 3,700 11,900
Tasmania Seamounts Marine Reserve	1999	38,900	VI Note: Category Ia below 500 metres	38,900
Total area of estate (ha)		27,244,080		

Source: <http://www.deh.gov.au/coasts/mpa/commonwealth> (Accessed 4 June 2006)

Annex 2: Criteria to be used as a basis for the identification and selection of MPAs

Identification	Representative	<p>The area should:</p> <ul style="list-style-type: none"> • Represent one or more ecosystems within an IMCRA bioregion; • Add to the representativeness of the NRSMPA
	Comprehensiveness	<p>The area should:</p> <ul style="list-style-type: none"> • Add to the coverage of full range of ecosystems recognized at an appropriate scale within and across each bioregion; • Add to the comprehensiveness of the NRSMPA
	Ecological importance	<p>The area should:</p> <ul style="list-style-type: none"> • Contribute to the maintenance of essential ecological processes or life-support systems; • Contain habitat for rare or endangered species • Preserve genetic diversity (i.e. is diverse or abundant in species) • Contain areas on which species or other systems are dependent, e.g. contain nursery or juvenile areas or feeding , breeding or resting areas for migratory species • Contain one or more areas which are a biologically functional, self-sustaining ecological unit
	International or national importance	<ul style="list-style-type: none"> • The area should rated or have the potential to be listed, on the world or national heritage list or declared as a Biosphere Reserve or subject to an international or national conservation agreement
	Uniqueness	<p>The area should contain:</p> <ul style="list-style-type: none"> • Unique species, populations, communities or ecosystems • Unique or unusual geographic

		features
	Productivity	<ul style="list-style-type: none"> The ecosystems and/or communities should be vulnerable to natural processes
	Vulnerability assessment	<ul style="list-style-type: none"> The ecosystems and/or communities should be vulnerable to natural processes.
	Biogeographic importance	<ul style="list-style-type: none"> The area should capture important biogeographic qualities
Selection	Economic interests	<p>The area should:</p> <ul style="list-style-type: none"> Make an existing or potential contribution to economic value by virtue of its protection, e.g. for recreation or tourism, or as a refuge or nursery area, or source of supply for economically important species; Have current or potential use for the extraction of or exploration for resources Have importance for shipping and/or trade; Have usage by traditional users including commercial fishers Have value due to its contribution to local or regional employment and economic development
	Indigenous interest	<p>The area should:</p> <ul style="list-style-type: none"> Have traditional usage and/or current economic value; Contain indigenous cultural values Have native title considerations
	Social interests	<ul style="list-style-type: none"> The area should have existing or potential value to the local, national or international

		communities because of its heritage, cultural, traditional aesthetic, educational, recreational, or economic value.
	Scientific interests	<ul style="list-style-type: none"> • The area should have existing or potential value for research or monitoring
	Practicality/feasibility	<p>The area should:</p> <ul style="list-style-type: none"> • Have a degree of insulation from external destructive influences; • Have social and political acceptability, and a degree of community support • Have access for recreational, tourism, education; • Have compatibility between an MPA declaration generally and existing uses; • Have relative ease of management, and compatibility with existing management regimes
	Replication	<ul style="list-style-type: none"> • The area should provide replication of ecosystems within the bioregion.

Annex 3: Actions to implement the National Representative System of Marine Protected Areas

	Action	Implementation
Understanding comprehensiveness	<ul style="list-style-type: none"> • A study should be carried out to determine how to assess comprehensiveness for the NRSMPA • Activities related to the gap analysis of comprehensiveness will be advanced including using collaborative Australian Protected Areas Dataset (CAPAD). 	Commonwealth Environment Australia in collaboration with all jurisdiction
Understanding adequacy	<ul style="list-style-type: none"> • A study should be carried out to determine how to assess adequacy for the NRSMPA it will include an assessment on viable MPA size, the role of scientific reference areas, and targets 	Commonwealth Environment Australia in collaboration with all jurisdiction
Understanding representativeness	<ul style="list-style-type: none"> • A study should be carried out to determine how to assess representativeness for the NRSMPA 	Commonwealth Environment Australia in collaboration with all jurisdiction
Vulnerable ecosystems	<ul style="list-style-type: none"> • Assessment and mapping of rare, vulnerable and endangered marine ecosystems should be carried out, in association with an analysis of threatening processes 	All jurisdiction
Identifying priorities for candidate MPAs	<ul style="list-style-type: none"> • Identify national and regional candidate areas for establishing MPAs based on information from Actions 1-4 and 10-11 	Commonwealth Environment Australia in collaboration with all jurisdiction
Ecosystem mapping	<ul style="list-style-type: none"> • Ecosystem mapping and biodiversity assessment 	All jurisdiction
Developing data collection standards	<ul style="list-style-type: none"> • Cross-jurisdictional cooperation to develop comparable standards for data collection. 	Commonwealth Environment Australia in collaboration with all jurisdiction
Review methods for ecosystem mapping	<ul style="list-style-type: none"> • Review methods for mapping ecosystems for the NRSMPA and develop an operational definition of ecosystem 	Commonwealth Environment Australia in collaboration with all jurisdiction
Rapid assessment methodology	<ul style="list-style-type: none"> • To identify the areas of highest priority for addition to the NRSMPA 	Commonwealth Environment Australia in collaboration with all jurisdiction

Threat analysis research	<ul style="list-style-type: none"> To conduct study into threats to marine ecosystems and analyze their potential impacts 	Commonwealth Environment Australia in collaboration with all jurisdiction
Apply threatening processes analysis	<ul style="list-style-type: none"> To incorporate the analysis of the impacts of threats or threatening processes into gap analyses 	Commonwealth Environment Australia in collaboration with all jurisdiction
Harness community knowledge	Document relevant knowledge of traditional and local communities through a series of targeted mechanisms to ensure relevant processes draw on available information.	Commonwealth Environment Australia in collaboration with all jurisdiction
Harness industry knowledge	Document relevant knowledge of industry and its ongoing information gathering programs through a series of targeted mechanisms. Incorporate into appropriate inventories/databases and make accessible	Commonwealth Environment Australia in collaboration with all jurisdiction
Ocean policy	Develop linkages for the NRSMPA within the Regional Marine Planning framework	Commonwealth Environment Australia in collaboration with all jurisdiction
Provincial level regionalization	Review Oceans Policy provisional Large Marine Ecosystem (LME) Regionalisation and relationship with IMCRA	Commonwealth Environment Australia in collaboration with all jurisdiction
Baseline data collection	Continue baseline data collection Promote public funding of research organizations for baseline data collection, including developing cost-effective methodologies	Commonwealth Environment Australia in collaboration with all jurisdiction
Enhancing taxonomic capacity	Identify gaps in marine taxonomic capacity and prepare a report recommending actions to address the gaps	Commonwealth Environment Australia in collaboration with all jurisdiction
Maintaining core datasets	Continued commitment by all jurisdictions to regular updating of national datasets, databases (including further refinement and maintenance of CAPAD), and metadata directories	Commonwealth Environment Australia in collaboration with all jurisdiction
Comparable databases	Develop and apply standards to improve comparability of databases related to MPAs across jurisdictions to enhance information sharing across the NRSMPA	

Annex 4: Protected and Managed Marine Areas in United Republic of Tanzania

Area (total km ² including supra-tidal area)	Date established	Sub-tidal Area (km ²)
MAINLAND TANZANIA (870 km ²)		
Dar es Salaam Marine Reserves System – comprises 4 islands, designated as Marine Reserves in 1975, and placed under the mandate of MPRU in 1998	1975	26.0
Maziwe Island Marine Reserve	1981	2.6
Mafia Island Marine Park (total = 822 km ²) Multiple use Marine Park with zoning	1995	615.0
Tanga collaborative fishery management areas (1603 km ² , of which 29 km ² is no-take)	1996-2000	26.4
Mnazi Bay Ruvuma Estuary Marine Park (total area = 650 km ²)	2000	200
Saadani National Park: a new protected area, up-grading the previous Game Reserve, and potentially extending protection into the sea	2004	
Kinondoni Integrated Coastal Area Management Program	2000	
Rufiji Environmental Management Program – a large program covering the entire delta, but with a coastal component	1998	
ZANZIBAR (510 km ²)		
Chumbe Island Coral Sanctuary (all no-take) -management delegated to a private company	1994	0.3
Menai Bay Conservation Area - a community - managed MPA	1997	470
Misali Island Marine Conservation Area (total area 23 km ² include terrestrial; no-take = 1.4 km ²) -an NGO and community-managed MPA	1998	21.6
Mnemba Island Marine Conservation Area (no-take zone)	2002	0.15

Kiwengwa Controlled Area -established in 2000 but never managed	2000	17.5
Ngezi Forest Reserve (14.4 km ²) Includes mangroves and beach	1959	
Jozani National Park	2004	

Source: Ruitenbeek et al, 2005 Blueprint 2050: Sustaining the Marine Environment in Mainland Tanzania and Zanzibar.