

## Coastal Management and Implementation in Taiwan

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### Abstract

Majority of the world's population lives close to the coast and is highly development on coastal resources, which are being exploited at unsustainable rates. Since the martial law was lifted in 1987, the government has permitted development projects in coastal areas. However, rapid growth and overexploitation have led to significant degradation of coastal environments. To protect and sustain marine ecosystem functions, species, and habitats, proactive conservation measures are needed. One of the most effective measures is the establishment of marine protected areas. The government authorities in Taiwan have already created a number of protected areas, areas of interest to protect in coastal areas and to achieve the goal as 10% MPA by 2020. Meanwhile, Taiwan's government reorganizes to improve and streamline the administrative efficiency in recent years. As regards to the ocean authority, researchers and concern groups are recommend to establish the ocean institute to manage and enforcement the coast areas. This study focuses on the problems of the current situation of coastal areas in Taiwan. Then discuss the mechanisms and functions to establish the marine protected area to ensure sustainable marine futures and coastal governance, especially for those coastal communities who most depend on it. Finally talk about the new institute Ocean Affairs Council (OAC) in the coming future in Taiwan.

**Keywords:** Coastal management; Marine protected area; Coastal governance; Taiwan

### Introduction

The Governmental Reconstruction of Executive Yuan Cabinet in Taiwan has been set up and progressing in addition to Ministry of the Interior, Ministry of Environment and Natural Resources, Ministry of Transportation and Construction, Ministry of Agriculture, Ministry of Economic and Energy Affairs, Ocean Affairs Council, Mainland Affairs Council. They will put in place if supported by a majority of the legislators before this end of year. On the other hand, Taiwan enjoys one of the world's highest concentrations with 2,500 species of fishes. The number of marine species found in Taiwan can exceed one-tenth of that in the oceans world. But people and the government do not pay more attention for the marine environment and marine resources [1]. Moreover, long term pollution, overfishing and rapid coastal development result in marine environmental degradation and marine resources overexploitation. One of the crucial strategies used to minimize human activities pressures and to conserve marine biodiversity and marine fisheries are the implementation and establishment of Marine Protected Areas (MPAs). To successfully implement ocean governance is to have a specialized agency on marine affairs.

Viewed from the historical process of legislation and the corresponding connotation, people and government in Taiwan had different opinions regarding whether ocean area should be counted as part of the territory. Marine affairs have never been a focus of political work or the issues of public concern. Therefore, Marine and coastal management responsibilities need to be clarified and integrated. As people have more expectation regarding the development of marine resources, given the increasingly serious political situation of the surrounding ocean area, Japan enacted *Japanese Ocean Basic Law* in 2008 and *Basic Plan on Ocean Policy* in 2013. Mainland China also formulated the proposals and initiatives similar to *China Ocean Basic Law*. On July 22, 2013, China Coast Guard was integrated and ends the five dragons stirring up the sea. The newly established China Coast Guard was resulted from the integration of China Marine Surveillance from State Oceanic Administration, Fishery Bureau from the Ministry of Agriculture, Customs and Border Protection of the Ministry of

Public Security and the Anti-smuggling Department of the Customs, which effectively resolved the conflicts of administration and unclear governance in the marine affairs [2]. Two days later China Coast Guard sent fleet to the Diaoyu Island to demonstrate the central government's concern of marine administration and the detailed initiatives to protect the state's interest. In Taiwan, the management of marine affairs seems quite complacent and conservative. How do we regard the marine affairs? How can we exert beneficial planning regarding our blue sea vision? These are some of the questions requesting answers now.

Marine affair administration agencies are quite diverse and the managing framework lacks effective and clear negotiation and integration mechanism. Considering the vague task division between different departments, many procedures are done repeatedly with some formalities left unattended. In case some events occur, no one is willing to take the responsibilities. Such a mode of management not only caused the loss of the state interest but also influence the overall marine affairs and their development in Taiwan. In 2008, President Ma proposed the opinion of "Making a Blue Revolution and Seeking Prosperity from the Ocean" with the detailed initiatives of "establishing Ministry of Oceans to govern all the marine affairs". He also stressed the significance of establishing the government agency to exclusively govern the marine affairs. The establishment of Ministry of Oceans illustrated that the entire ocean related authorities should be integrated to establish the only exclusive organization for marine management. At present, all the marine affairs are governed by different departments or agencies, which have their own traits and significant implications. Establishment of a specialized agency of marine affairs, those involved

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**Received** December 22, 2016; **Accepted** January 06, 2017; **Published** January 10, 2017

**Citation:** Shih YC (2017) Coastal Management and Implementation in Taiwan. J Coast Zone Manag 19: 437. doi:[10.4172/2473-3350.1000437](https://doi.org/10.4172/2473-3350.1000437)

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agencies will inevitably become an important part of the marine affairs. Some agencies even will become the significant axis for the marine affairs administration [3]. All related organizations and agencies of the marine affairs management are the Ministry of Foreign Affairs, Coast Guard Administration (CGA), Environmental Protection Agency, Construction Department, Economic Construction Committee, the Ministry of Communications, Council of Agriculture, Ministry of Economics, and Ministry of the Interior, Cultural Affairs Council, National Sciences Council, and Ministry of Education and so on.

### Concepts Involved in the Establishment of “Ministry of Oceans”

Coast guarding is fundamental for national security. In order to effectively manage its marine territory and to unify authority over the task of coast guarding, the Taiwan Government established the CGA under the Executive Yuan on January 28, 2000, integrating the Coast Guard Command (formerly under the Ministry of Defence), the Marine Police Bureau (formerly under the National Police Administration, Ministry of Interior), and several cutters from the Taiwan Directorate General of Customs, Ministry of Finance. The CGA formally unifies coastal and maritime law enforcement agencies. Thus, the CGA devotes itself to safeguarding our marine interests as well as people's life and property while at the same time emphasizing the due process of law. In carrying out our work, we pay equal attention to the principles of equity, legitimacy, and thoroughness. The founding of CGA introduces a new era for our maritime and coastal guarding as we pursue ocean development. The CGA has identified three major tasks to concentrate on: maritime law enforcement, maritime services and maritime affairs. Our key focus is on protecting our territorial waters and coasts, providing search and rescue at sea, escorting fishing fleets, and promoting international maritime affairs. It is our responsibility to safeguard people's life and property, and defend the interests of our fishermen and the resources of our fishing industry. These are the things CGA must do to ensure that our maritime rights and interests are not infringed upon. But the people in Taiwan consider that CGA is an “enforcement” agency at the most, which cannot reach the scale and pattern of a specialized agency on marine affairs [4].

In 2000, the election of the President of Taiwan all the candidates proposed *Ocean Policy White Paper* for their vision of Ocean Country in the future. During the presidency of Chen Shui-bian, the government set up the reorganization team and identified the organizational structure of “Ministry of Marine Affairs”. However, in the process of implementing such initiatives, unexpected changes took place and the sudden disappearance of “Ministry of Marine Affairs” was followed by the setup of “Ocean Affairs Council, OAC”. Concern group worry about establish OAC which was in complete incompliance with the main trend of the international marine affairs and the coastal integrated management [5].

Indeed, to streamline the executive branch and improve its effectiveness, while at the same time enhancing flexibility within its departments, several government structure laws were amended between 2010 and 2011. Several agencies will cease to exist after their functions are transferred to other commissions or ministries, and the number of Cabinet-level organizations will be reduced from 37 to 29 over the restructuring period from January 1, 2012 to December 31, 2014 [6]. When the process is complete, the Executive Yuan will consist of 14 ministries, 8 councils, 3 independent agencies and 4 organizations. The 6 new ministries being created through the reorganization or consolidation of existing agencies are the Ministry of

Labour, the Ministry of Agriculture, the Ministry of Health and Welfare, the Ministry of Environment and Natural Resources, the Ministry of Culture, and the Ministry of Science and Technology.

### The Situation of Taiwan Coastal Problems

There are 60% of the world population residing coastal areas due to the abundant resources, functions, benefits, and opportunities of the coastal zone. Even in ancient times, the coastal zone was always the heart of economy and culture, Taiwan is also an example. In addition, the coastal region is a relatively sensitive ecosystem. 90% of the world's fish and shellfish come from the coastal zone, and it is also where human economical activities mainly take place. Nevertheless, the coastal area is also vulnerable to tsunami, soil Salinization, land subsidence, and sea water inundation. The damage and inappropriate development inflicted by humans had resulted in the devastation of Taiwan's surrounding coastal zone and sea area. Research show that the coastline cementation of Taiwan is up to 51% this not only affects human's relationship with the sea, but also violates the coastline's natural development [7].

The deterioration of the overall marine environment, the over consumption and exploitation of resources, the implementation of many policies not reaching the goals of sustainable utilization, the lack of the real marine preservation area and the non-effectuation of the laws, the lack of the fundamental data of ecological studies and people's backward conservation concepts and knowledge are some of the examples to demonstrate the serious situation, which are discussed respectively as follows:

#### Habitat destruction

The rapid economic development in the past is made at the price of environmental protection. The conservation work is done without enough attention to the sea. The precious coastal wetlands, which are perfect for the creatures that live in the natural intertidal environment, are dying out. According to the statistical data of the water conservancy bureau, nearly 55 per cent of the coastal area of Taiwan has been cemented, including the developed coastal industrial park, new towns, embankment, port construction, release of cement facilities, which caused tremendous damage to the coral reefs, mangroves, estuaries, sand shores, lagoon and reef coast among other various kinds of wetland environments [8].

#### Unsustainable policies

Among all the agricultural new plans the government tries to promote, coaching the fishery production and increased consumption of fish are of the two major kinds, including the continuous subsidies to fishing boats, the introduction of foreign labours, the improvement of the fishery environment among other measures to increase the output. The policies of “exclusive fishery rights” are also not conducive to the division and construction of the marine preservation area. Even the programs of “fishery coaching” and the “development of prosperous fishery villages” are worsening the excessive fishery problems as these programs raise high demand for the small bait fishes and encourage people to consume sea food. It has transferred the fishery reward pressure in disguise to marine fishing and worsened the overfishing and miss-catching [9].

#### Protected areas perform practically no function

There are around 60 so-called “protected areas” are set up according to the Cultural Heritage Preservation Act, Wildlife Conservation Act, National Park Law and Fisheries Act in Taiwan. Most of them are for a few species, lacking proper management and maintenance. Therefore, they are nearly equal to non-existing.

### Overconsumption

Taiwanese people love eating, cultivation and fishing fishes. Not only the average fish consumption has reached the world's second, but also consume nearly every species of fish that is available. Especially the coral reef fishes are consumed at staggeringly large amount. Under the great pressure of the consumer market demand, with the weak concept of law observance, the measures for ecological preservation or fishing limitation do not work well [10].

### Related regulations cannot be enforced effectively

In the past, the government seldom promotes the fishing restriction. It was not until 2006 that the ecological fishing is highly advocated with the measures taken including the non-taking of flying fish roe, the deep-sea corals, whitebait, and whale sharks and so on. However, all these policies were objected by fishers. Among them, only the whale sharks had been included in the official list of forbidden fishing. The other three are still included in the fishing list. Meanwhile, the fishers resort to the poll to exert pressure on the government so that it can issue the deep-sea reel fishing permit and even eliminate the policies of non-trawl-fishing within 3 miles in the near shore area. With regard to *Coast Law* which was important to the land planning of coastal areas and marine habitat protection, it was redelivered to the Legislative Yuan for review. When it will be issued and its results and whether it can be promoted effectively are unknown to us. The marine relaxation events have been prosperous since the lifting of ban on coastal defence. Without proper planning and administration in advance, diving or fishing, fishery and ride the waves are nearly done in every corner on the shore of Taiwan, which exerted great damage to the resources in and along the coast [11].

### Marine ecological data is insufficient

In the past, the pieces of information regarding Taiwan marine ecological materials are so incomplete that when the government is promoting the restrictions on fishing (in terms of fishing industry, fishery areas, fishing methods, body length, size or quantity), or the preservation area (location and size) among other relevant caring measures., we cannot find the reliable data serving as the reference for the formulation of laws and regulations [12]. At present, the Ministry of the Interior is trying to carry out the mainland reef layer investigation programs, which did not list the oceanic creature resources.

### Marine conservation concepts is backward

Currently, most people do not believe that fish as a wild animal needs protection, nor do they become aware that eating or keeping rare species which have a small population is kind of violation of the conservation nature, including whale shark, shark, garoupa, sea dragon, hippocampus and so on. If people discover new fishing grounds or fish hosts, they would rush to fishing regardless of whether the fishes are breeding or not. In marine recreation activities, many people also lack the knowledge and concepts of properly using and breeding the sea creatures (Figure 1). Fishers still cannot understand and accept the implications of divide and plan for the construction of ocean conservation areas. All of these issues are to be solved with the promotion of the marine resources conservation work [13].

### Coastal Management in Taiwan

#### The historical of coast area in Taiwan

Taiwan surrounded by seas, has a coastline stretching up to 1,600 km. During the period of martial law, when the area was controlled

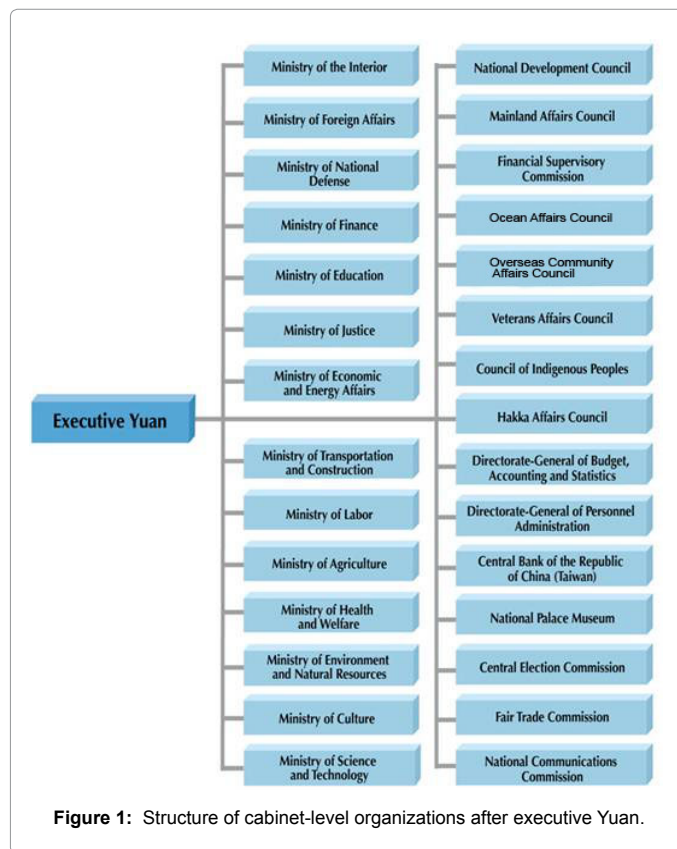


Figure 1: Structure of cabinet-level organizations after executive Yuan.

by the military, under the Ministry of National Defence, the ecological diversity was abundant. Therefore, people enjoyed the land area rather than the ocean or the coastal areas. Actually, there were less human activities and interventions in the ocean and around the coastal areas at that time. Hence, the marine and coastal area resources were well protected. In 1987, when Taiwan government lifted the martial law, people started utilizing the coastal and marine resources and began the development of the coastal areas, but had neglected and didn't plan well for sustainability of these resources. However, since the martial law was lifted, low-priced coastal areas have attracted developers. Haphazard development can damage and deplete marine resources and degrade the environment. Coastal environments are under heavy pressures therefore integrated coastal management (ICM) approach is to improve the management and conditions for environmental sustainable development. Marine protected area (MPA) is a useful management tool to reach the ICM goal and application in many countries. The Ocean Policy White Paper was published to preserve marine biodiversity and aim for resources sustainable in 2006 [14]. In response, conservation organizations, academic institutions, and even government departments have urged the Taiwanese government to establish marine protected areas (MPAs).

Given the increasingly degraded state of the global marine environment, Marine Protected Areas (MPAs), including fisheries 'No-take' zones, together with other management approaches such as Integrated Coastal Zone Management (ICZM) are now recognised as essential tools to help reduce, prevent and/or reverse ongoing declines in marine biodiversity, habitats and fisheries productivity. MPAs can help support and improve ecosystem function through maintaining or re-establishing ecological structure, function and processes that support economic and social uses and values across the world [15]. MPAs also

have a vital role to play in mitigating the effects of climate variability and change and can contribute towards climate change adaptation by protecting ecosystem resilience, buffering local climate impacts, reducing the risks and impacts of extreme events (e.g. storm waves, coastal flooding, sea level rise), and protecting essential ecosystem services.

### Taiwan implement marine protected area

MPAs in Taiwan defined as being designed for the "protection of coasts or offshore areas, for the sustainable use of the marine ecosystem and its resources, to maintain marine biodiversity, to conserve and protect endangered or threatened species and their habitats including marine mammals and plants, to maintain historical or cultural heritage, to provide recreation and research, which have been reserved by law or other effective means as part or all of the enclosed environment whether permanent or tentative.

During the first International Marine Protected Areas Congress in 2005, participants stressed the necessity of expanding global MPA system by 12% and enhancing high sea conservation efforts by 2012 as measures to realize the protection of marine biodiversity's. NGO in Taiwan ask government that marine protected areas should reach the territorial sea area 12% on world oceans day in 2012. Taiwan Environmental Information Center (2011) has called for the government to increase the marine protected areas from the current 6% to 12% in 2012 and National Council for Sustainable Development has asked relevant departments to increase to include 20% of water area within 12 nautical miles from Taiwan's coast to be protected areas by 2020 and implement effective management [16]. In 2009, the size of Taiwan's marine protected area was only 4,396 km<sup>2</sup> while the Great Britain has 550,000 km<sup>2</sup> protected areas in Chagos Islands. Certainly, the idea of marine protected area should not only be limited to the size. The public's awareness to work with the government is a more crucial issue.

### List of the Performance of MPA in Taiwan

1. Dongsha Atoll National Park: The Dongsha atoll, located in the north of South China Sea, is about 400 Kilometers from the island of Taiwan and has been designated as a national park in 2007.
2. The South Penghu Marine National Park: The Marine National Park Headquarters MNPH announced to establish the South Penghu Marine National Park on June 8, 2014.
3. Chinese white dolphin (Indo-Pacific Humpback Dolphin), *Sousa chinensis*, Stuides estimate the population there are around 99 Chinese White dolphin in Taiwan water. There are many reason caused reduce their population such as by catch, habitat disappears and ethnic separation, to establish the Marine Mammal Protected Area, MMPA to protect Chinese white dolphin in 2014 [17].

### Need a Specialized Agency on Coast Governance and Management

Studies show that the establishment of marine protected area can hardly protected the marine ecology and resources. By 2006, there were 4435 MPAs protecting 2.35 million km<sup>2</sup>, equivalent to 0.65% of the global oceans or 1.63% of EEZs, which compared poorly to achievements in the terrestrial domain, where 104,791 protected areas covered 18.38 million km<sup>2</sup>, equivalent to 12% of the global land surface area. By 2008, there were 5045 MPAs, protecting a total of 2.59 million km<sup>2</sup>, equivalent to 0.72% of the global oceans or 1.80% of EEZs. Global

MPA coverage has now reached 4.21 million km<sup>2</sup>, with 5850 MPAs covering 1.17% of the global ocean surface or 2.86% of the EEZs. Indeed, marine protected area cannot guarantee complete protection all the marine environment and resources [13]. Marine protected area can hardly protect the marine ecology and resources. Science journal mentioned that only 18% of coral reefs are included in the protected areas in the world as a whole and only 1.6% of these coral reefs are truly protected. Some researcher pointed out that marine protected areas set up by many governments actually end up with failing. For example, marine protected area in Kenting National Park set up in 1984, the coral reefs continues to degenerate since then and many fish species are endangered that were the results of ineffective management by the government [18]. The Pratas Marine Protected Area set up in 2007 fails to stop foreign fishermen from entering the protected area for fishery due to the lack of effective management. These situations illustrated the fact that Taiwan does not have clear and effective measures for protecting marine ecology and the protected areas are not truly preserved. Therefore, to implement the marine protected areas need to be governance and managed in accordance with a specialized agency.

### Current Central Government Organize Framework

To highlight its emphasis on maritime affairs, the Executive Yuan established the Executive Yuan Maritime Affairs Promotion Council on January 7, 2004 in Taiwan. Which is a platform for promoting maritime affairs? The council is supported by 6 taskforces working in a cross-departmental mode for integrating resources [11].

Several agencies will cease to exist after their functions are transferred to other commissions or ministries, and the number of Cabinet-level organizations will be reduced from 37 to 29 over the restructuring period from January 1, 2012 to December 31, 2014 [19]. When the process is complete, the Executive Yuan will consist of 14 ministries, eight councils, three independent agencies and four organizations. The six new ministries being created through the reorganization or consolidation of existing agencies are the Ministry of Labour, the Ministry of Agriculture, the Ministry of Health and Welfare, the Ministry of Environment and Natural Resources, the Ministry of Culture (MOC), and the Ministry of Science and Technology.

### Future Government Reorganize Framework

In the coming future, Ocean Affairs Council (OCA), the specialized agency on marine affairs, provides comprehensive planning, processing, coordinating and implementing for the marine ecological conservation and marine resources sustainable management business. There are Marine Conservation Agency, Coast Guard Administration, Ocean Affairs Council Educational and Training Institute, National Marine Development and Research Institute and so on [20].

### Ocean Affairs Council, Executive Yuan

According to the draft of the Organizational Law for Ocean Affairs Council of Executive Yuan. Executive Yuan makes the overall policies of the ocean affairs to safeguard the ocean territory, stimulate the ocean studies and industrial development and enhance people's awareness of ocean. While integrating, planning, reviewing, coordinating and promoting the policies of the relevant ocean affairs, Ocean Affairs Council is set up to proceed the sea and coast patrol business and take charge of the following matters:

1. Comprehensive planning, reviewing, coordinating and promoting the overall ocean policies and basic laws.
2. Comprehensive planning, coordinating and promoting the

marine industrial development.

3. Ocean homeland planning, environmental protection, resources management, sustainable use, biological diversity conservation and pollution prevention as well as the comprehensive planning, coordination and promotion.
4. Comprehensive planning, coordinating and promoting the sea and coast security.
5. Promoting and assisting in the marine diversity cultural publicity preservation and under water culture assets supervisory protection.
6. Planning, disposing, publishing, coordinating and promoting the state ocean education and information.
7. Comprehensive planning, coordinating and promoting the state ocean scientific research and technological development.
8. Comprehensive planning, coordinating and promoting the ocean human resources development.
9. Comprehensive planning, participating, coordinating and promoting the ocean international treaty and international cooperation.
10. Other matters related with ocean business integration and security [21].

#### Coast Guard Administration, Ocean Affairs Council

Ocean Affairs Council establishes Marine Patrol Agency to provide convenience to the procedures of sea and coast patrol business. Marine Patrol Agency of Ocean Affairs Council takes charge of the following items:

1. Planning, coordination, supervision and implementation of the state marine rights and interest safeguarding.
2. Planning, coordination, supervision and implementation of ocean affairs.
3. Carrying out security check over the ships or other vessels into the port and over personnel of the treaty ports.
4. Smuggling prevention and check at the seas, coasts, river mouth and the non-treaty ports to prevent the illegal entrance, illegal fishing and other crimes.
5. Carrying out boarding, check and criminal investigations of the ships from the Republic of China at the public sea.
6. Investigation, coordination and treatment of the sea and coast patrol and other international affairs.
7. Sea and coast security check.
8. Security maintenance of the coast controlled area.
9. Surveillance, coordination, assistance and implementation of the sea and coast pollution prevention, cultural assets conservation and ecological conservation.
10. Other coast patrol business [22].

#### Marine Conservation Agency, Ocean Affairs Council

Taiwan is surrounded by the ocean and the marine resources and protection of marine environment is concerned with the sustainable development of the state. In order to protect the diversity of the marine

ecological systems and the productivity so that we can better use the marine resources and promote the sustainable development of marine industry, enhance people's awareness, safeguard the state's marine rights and interests, the marine affairs governing agency should take the responsibilities, especially when the rights and responsibilities of marine conservation are not well clarified [23]. Hence, the *Organizational Law of Ocean Affairs Council Marine Conservation Agency* is drafted to stipulate the following affairs the Agency should be in charge of:

(1) Planning, coordination, patrol and protection, supervision and implementation of the marine ecological environment protection.

(2) Planning, coordination, patrol and protection, supervision and implementation of the marine creature diversity conservation and recovery.

(3) Planning, coordination, patrol and protection, supervision and implementation of marine resources' sustainable development.

(4) Coordination, supervision and implementation of the marine pollution countermeasures and marine coastal engineering supervision and so on.

(5) Planning, coordination, supervision and publication of marine conservative programs publicity and information.

(6) Other matters related to marine conservation law enforcement.

#### Ocean Affairs Council Educational and Training Institute

Talents are the foundation for developing the country's causes. The planning and administration of marine affairs and the legal enforcement staff's work involve *United Nations Convention on the Law of the Sea* as well as the law enforcement in domestic organizations. Ocean Affairs Council educational and training institute is to provide the themes along with the climatic changes, marine creature conservation, storms, tides among other marine environmental protection issues involving the marine physics and marine chemistry. Meanwhile it also aims at developing and providing professionals in the fields of marine resources, marine science and technologies, marine ecology, marine culture and marine laws among other fields [24]. As the strong backup for the marine affairs governing agency, the Institute plans to make the *Organizational Laws of Ocean Affairs Council Educational and Training Institute*. Its main responsibilities include.

1. Education, training and appraisal of the staff of marine and coast patrol.
2. Education and training of the marine conservation staff and their implementation of tasks.
3. Education and training of the marine managerial staff and their implementation of tasks.
4. Review, verification and issuance of the marine conservative and management professional license.
5. Other affairs concerning the marine education and training.

#### National Marine Development and Research Institute

National Marine Development and Research Institute takes charge of the following matters:

1. Formulation and implementation of the state marine polices.
2. Planning, coordination, integration and implementation of the marine studies and development plan.

3. Dissemination of marine studies and development results and technologies.
4. Other matters related to marine studies and development.

### The Challenge of Government Reorganize Issues

The Executive Yuan published the first Ocean White Paper in 2001 as a pledge and guidelines for national maritime affairs management and policies. In 2004, National Marine Policy Guidelines were promulgated and served as the whole guidelines for our national maritime policies. In 2006, the second Ocean Policy White Paper was promulgated, which was expanded and included 7 themes, namely, international rights, national safety, national developments, environment and resources, industries, cultures and scientific research [25,26]. In 2008, President Ma proposed “Making a Blue Revolution and seeking prosperity from the Ocean” as the main policy and initiated to plan the establishment of Council of Ocean Affairs in accordance with the restricting of the Executive Yuan in the coming future. This vision threw out the old “isolation policy” and shifted to the utilization of the ocean, aiming to achieve “prosperity with ocean”. The emphasis was that the ocean is fundamental to the nation, and focusing on the development of marine industries, with protecting and maintaining marine environment as the foundation [27]. CGA conducts and manages marine affairs in order to maintain marine and coastal order according to the Coast Guard Act to ensure the safety and security of the people. The core missions are “marine law enforcement”, “marine services”, and “marine affairs”. The Administration makes every effort to protect marine environment. There are many marine affairs issues in need of international cooperation, problems such as oil spill and pollution needs the support and aid of relevant authorities to protect our marine environment and resource protection. The Administration was formerly a subordinate of the Cabinet Committee on Maritime and Oceanic Affairs, which was reformed into the Task Force for Maritime Affairs after the evaluation of the Executive Yuan. The Administration will be in charge of marine environment and resource protection, other than the conduction of marine oil pollution prevention, there is still remaining efforts and development improvements in the future concerning coastal zone governance, marine tourism, recreational fishery, marine protected areas, nature reserved areas, crucial wildlife habitats, and marine national park [28].

### Conclusion

The vision of government marine policy in Taiwan is “Making a Blue Revolution and Seeking Prosperity from the Ocean”, it was proposed to establish the Ministry of Oceans. It is deeply felt that the marine affairs in our country need specialized agencies on marine affairs to arrange for the planning, implementation and coordination. Even though, The President expressed that at the beginning, the Ministry of Oceans was planned for construction. Later he changed the decision. Therefore, it was decided to establish OAC first before the establishment of the Ministry of Oceans. Just as Agricultural Council and Labour Council turned to be Ministry of Agriculture and Ministry of Labour, the currently established Ocean Affairs Council would turn to be the Ministry of Oceans. It seems that the government’s pace of promoting the setup of marine affairs organization was too slow. Marine workers in Taiwan feel disappointed and helpless about the situation and hoped that the Legislative Yuan could resolve the issues at an early date.

On the other hand, MPA is multipurpose and has been regarded as an effective way to protect both the marine environment and biodiversity. To date, Taiwan already has several systems and various

types of protected areas such as national parks, wildlife reserves, marine reserve, and fishery resource conservation areas and so on. No matter what way to establish MPA such as top-down or bottom-up in Taiwan, to implement the successful coast governance effectiveness. It is necessary to has a specialize agency to integrate all the marine affairs and to encourage the public to love and know more about the oceans.

In the future the OAC will endeavour to maintain coastal and marine environmental governance. In the meanwhile, OAC will play the role of “the guardians of our blue territory and the promoters of maritime affairs” and integrate the ocean policy, development, and coordination among related authorities, to ensure maritime security and safety, to ascertain marine affairs administered in concord, and to concert central government and local governments. Moreover, OAC will make use of the rights and obligations conferred under the international law of sea to move forward one step at a time and achieve ocean country objective and to write a new page of people’s hope.

### References

1. Adams VM, Pressey RL, Naidoo R (2010) Opportunity costs: Who really pays for conservation? *Biological Conservation* 143: 439-448.
2. Agardy T (2000) Information needs for marine protected: scientific and societal. MOTE Symposium invited paper. *Bull Mar Sci* 66: 875-888.
3. Balgos MC (2005) Integrated coastal management and marine protected areas in the Philippines: Concurrent developments. *Ocean and Coastal Management* 48: 972-995.
4. Chape S, Harrison J, Spalding M, Lysenko I (2005) Measuring the extent and effectiveness of protected areas as an indicator for meeting global biodiversity targets. *Philos Trans Roy Soc* 360: 443-455.
5. Chia U, Yan W (1998) Coastal zone management in Taiwan: A review. *Ocean & Coastal Management* 37: 119-131.
6. Patrick C (2005) Observed and perceived environmental impacts of marine protected areas in two Southeast Asia sites. *Ocean and Coastal Management* 48: 252-270.
7. Sain B, Knecht RW (1998) Integrated coastal and ocean management concepts and practices. Island Press, Washington DC.
8. Council of Marine Advancement (2006) Ocean policy white paper. Research, Development and Evaluation Commission, Executive Yuan, Taipei.
9. Dudley N, Stolton S, Belokurov A, Krueger L, Lopoukhine N, et al. (2010) Natural Solutions: Protected areas helping people cope with climate change.
10. Gell FR, Roberts CM (2003) Benefits beyond boundaries: the fishery effects of marine reserves. *Trends Ecol Evol* 18: 448-455.
11. Laffoley D (2008) Towards networks of marine protected areas. The MPA Plan of Action for IUCN’s World Commission on Protected Areas. IUCN-WCPA, Gland, Switzerland.
12. Maren L (2005) Integrated coastal zone management in the People’s Republic of China-An assessment of structural impacts on decision-making processes. *Ocean & Coastal Management* 48: 115-159.
13. Leslie HMA (2005) Synthesis of marine conservation planning approaches. *Conservation Biology* 19: 1701-1713.
14. Mackinnon K, Dudley N, Sandwith T (2011) Natural solutions: protected areas helping people to cope with climate change. *Fauna Flora Int* 45: 461-462.
15. Murray SN, Ambrose RF, Bohnsack JA, Botsford LW, Carr MH, et al. (1999) No-take reserve networks: sustaining fishery populations and marine ecosystems. *Fisheries* 24: 11-25.
16. Mora C, Andrefouet S, Costello MJ, Kranenburg C, Rollo A, et al. (2006) Coral reefs and the global network of marine protected areas. *Science* 312: 1750-1751.
17. Pauly D, Christensen V, Guenette S, Pitcher TJ, Sumaila UR, et al. (2002) Towards sustainability in world fisheries. *Nature* 418: 689-695.
18. Roberts CM, Hawkins JP, Gell FR (2005) The role of marine reserves in

- achieving sustainable fisheries. *Philosophical transactions of the royal society of London. Biological Sciences* 360: 123-132.
19. Rogers AD, Laffoley D (2011) International earth system expert workshop on ocean stresses and impacts. Summary Report. IPSO, Oxford.
  20. Salm RV, Clark JR (1984) Marine and coastal protected areas: A guide for planners and managers. IUCN, Gland, Switzerland.
  21. Shih YC (2009) Marine affairs and marine environment protection. *Coast Guard Bulletin Bimonthly* 37: 44-48.
  22. Shih YC, Chiau WY (2009) Planning a marine protected area at Chinwan, Penghu, Taiwan. *Ocean and Coastal Management* 52: 433-438.
  23. Spalding M, Fish L, Wood LJ (2008) Towards representative protection of the world's coasts and oceans progress, gaps, and opportunities. *Conserv Lett* 1: 217-226.
  24. Spalding M, Wood L, Fitzgerald C, Gkerde K (2010) The 10% target: Where do we stand? *Global Ocean Protection: Present Status and Future Possibilities*.
  25. Taiwan Environmental Information Center (2011) 1% less will not work! Asked the Government to implement the 2012 Taiwan marine protected areas 12%.
  26. Weeks R, Russ RG, Alcala AC, White AT (2010) Effectiveness of marine protected areas in the philippines for biodiversity conservation. *Conservation Biology* 24: 531-540.
  27. White AT (2005) Integrated coastal management and marine protected areas: Complementarity in the Philippines. *Ocean and Coastal Management* 48: 948-971.
  28. Wood L, Fish L, Laughren J, Pauly D (2008) Assessing progress towards global marine protection targets: shortfalls in information and action. *Oryx* 42: 340-351.