

Protection the marine environment in Vietnam: Actual state and Solutions

Van Trung Tran, Van Huong Dong

*Ho Chi Minh University of Transport
No.2, D3 Road, Binh Thanh District, Ho Chi Minh city, Vietnam*

Abstract: Vietnam has a coastline stretching over 3,260km, and more than 3,000 large and small islands. This is a favorable condition for our country to develop marine economic sectors such as oil and gas, tourism, aquaculture, etc. But the reality is that these needs of human benefit have been gradually depleted. Marine resources and the marine environment are polluted increasingly. Statistics show that about 70% of marine waste originated from the mainland every year when factories, factories, residential areas, hospitals, plant protection drugs. The vast amount of waste that has not been treated, through the drainage system discharged directly into rivers, hundreds of rivers flowing to the sea or discharged directly to the sea, carry large amounts of sediment, plastics, chemicals, Metal, sludge, even radiation.

Keywords: actual state, solution, marine environment, protection

1. Introduction

The sea and islands of Vietnam contain about 11,000 species of organisms residing in more than 20 typical ecosystem types in 6 different marine biodiversity regions. Seafood reserves of about 3.1-4.2 million tons/year, with the capacity of 1.4-1.6 million tons/year. Along the coast of Vietnam there are 370 thousand hectares of aquaculture.

The Vietnam Sea contains a large volume of rare minerals such as titanium, aluminum, iron, salt, manganese, glass sand and rare earths. There are many beautiful bays and islands in the world, such as Halong Bay, Bai Tu Long, Cat Hai, Cat Ba, Bach Long Vi ... which are favorable for the development of marine tourism and ecotourism.

In particular, the seabed in Vietnam has about 500,000 km² of oil and gas prospects (three of which are the Gulf of Tonkin, the continental shelf of Quang Tri - Thua Thien Hue and the southern continental shelf). According to preliminary estimates, oil reserves may reach 3 -4 billion barrels and gas is about 50 to 70 billion m³.

With the long coastline, many bays and gulfs have long become an important transportation route for Vietnam to trade goods domestically and internationally, of the 10 largest shipping lines in the world today. , There are five routes through the South China Sea or related to the South China Sea. Along the coast of our country, there are about 100 places to build seaports. In addition to the dense river systems such as the Quang Ninh river system, the Red river system, the Ma river, the Ca river, the Dong Nai river, Vam Co and the Mekong river system, Coastal road built during the past has created favorable conditions for inland trade in Vietnam with other countries in the region.

Recently, under the pressure of rapid population growth, the demand for economic development has been rising in the context of depletion of land resources, which has accelerated the trend toward the sea. , Exploit the sea, get rich from the sea. However, the exploitation activities mainly focus on economic development objectives, lighten the environmental protection, make many marine resources are exhausted exploitation, marine ecosystems are threatened. serious. Marine tourism is growing rapidly but lack planning and management is not scientific, so it also pollutes the coastal environment. Marine fish production exceeded the allowable level, 80% from coastal waters. In 2002, the International Resources Institute reported that as many as 80% of Vietnam's coral reefs are under threat, of which 50% are endangered. Since then, the quality of the marine environment and coastal areas in Vietnam has continued to decline. There are 70 marine species listed for protection, 85 species in critical condition at different levels, especially red tide in 2002, 2003 in Khanh Hoa, Ninh Thuan , Binh Thuan has caused great damage to aquaculture. The pollution of the marine environment in Vietnam is due to the following reasons:

At present, under the pressure of rapid population growth, the demand for economic development is increasing in the context of increasingly depletion of land resources as well as the tendency towards sea, exploitation The sea, enriched by the sea, but often accompanied by unsustainable modes of operation; Harvesting activities are mainly focused on economic development objectives to achieve maximum aspirations while minimizing environmental protection, with or without planning and plans. Specifically, with the loose management mechanisms of many countries around the world, especially in the context of climate change

impacts, the main manifestations are sea level rise and fruit temperature. Land, the issue of resource exploitation and protection of marine environment in many areas and countries are facing many challenges, many resources are exhausted, marine environment where many polluted to the point where Dong.

Research results from the United Nations, FAO and other international organizations indicate that more than 80% of global fish stocks are already exploited, of which over 25% of global fish are caught. Overexploited or depleted, while many other marine species are at risk of extinction when catches are reduced by 90% in recent years.

In addition to the current state of many marine mineral resources, oil and gas resources and other non-renewable marine resources are being over-exploited, unsustainable, coral reefs, seagrasses and forests. Mangroves are also on the increase in many parts of the world. It is estimated that seagrasses have lost 30-60% and mangroves account for one third of the world's forests - about 70% and about 11% of global reefs have been completely destroyed by the year. In the past 20 years, Southeast Asian countries have lost 12% of their coral reefs, while another 48% of coral reefs are in serious recession. Coral reefs are often home to about a quarter of all fish species, and are home to other marine life. The disappearance of coral reefs and the decline of fish will lead to the extinction of some sea creatures as they have no place to reside and reproduce. This not only severely affected the environment, but also caused many socio-economic problems due to food shortages provided to people living in islands and coastal areas, Mass migration from the coastal areas to the central

Along with the depletion, depletion of many marine resources due to exploitation, unreasonable use and lack of sustainability, the marine environment in many parts of the globe is facing many challenges and grave threats. Coastal inhabitants are increasing, coastal economic activities are developing, many coastal estuaries are polluted by wastewater discharged from industrial parks and urban areas along with the destruction of mangroves. Increasingly, and increasing in frequency and intensity of natural calamities and storms caused by climate change.

In a report for the Center for Ocean Solutions published in May 2009 entitled "Pacific Ecosystems and People: Threats and Opportunities for Action ", With the participation of more than 30 scientists in the fields of nature, physics and society, from information sources, analytical data of 3,400 articles and scientific reports from more than 50 countries. And territories, the report details the major threats to the marine and oceanic environment, their impacts, and provides a roadmap and measures to address these threats. According to the aggregate report from the report, the major threats facing the marine environment in these 50 countries and territories are in rich countries as well as in poor countries. , The islands, crowded or sparsely populated areas have a very common and very common level of alert:

(1) Environmental pollution originates from land and sea. Pollution from the mainland brought out. Land development activities, particularly in river basins such as urbanization, industrial development, brackish water aquaculture and capture fisheries, mining development, Emissions of large amounts of waste, mainly untreated. These untreated wastes pour into rivers and streams and pollute the coastal environment. It is estimated that the amount of waste from land to sea in our country now accounts for about 50-60% of marine pollution.

(2) Secondly, pollution from the sea, activities on the sea such as aquaculture and fishing, waste of fishing vessels, port development and dredging, sea tourism, oil exploration and exploitation, Gas, ship sinks and other marine environmental incidents (oil spills, oil spills, illegal spills, radioactive waste, toxic chemicals, etc.) pollute the marine environment, Vietnamese island. In addition, more and more means of transportation, the production and transportation of oil and gas on the sea increased incessantly, causing widespread pollution of the sea and islands.

(3) At present, natural resources in places where it is easy to exploit as on the continent is gradually depleted, environmental depression. Developed countries see ways of appropriating the natural resources of the least developed countries. We are facing the situation of large countries want to take advantage of their economic strength to occupy resources, environment, especially marine environment, islands such as indiscriminate exploitation destroys resource exhaust Sea food; Rebuilding reefs to deform the natural environment of the sea and islands; Test nuclear weapons in the waters of Vietnam, polluting habitat of aquatic and marine species.

(4) Impacts of climate change,

(5) Finally, the threats to the environment are: the invasion of alien species and the resonance threats of these threats.

2. Trends of solutions in order to rationally exploit the natural resources and protect the marine environment

In the past few years, in order to address the sea-related issues in each country towards the rational exploitation of natural resources and the protection of the environment for the sustainable development of the

sea, There are many efforts in the world to continuously develop and implement many policies, measures, programs and plans to exploit and rationally use natural resources and protect the marine environment and develop sustainably. The country and so far, many countries have achieved remarkable progress and success. Taking a look at measures and initiatives aimed at exploiting, rationally utilizing the resources and protecting the marine environment of some maritime nations, we can see that the general trend of countries to focus on some domestic Main content:

(1) Strengthen the construction and improvement of the legal system for rational exploitation of natural resources and environmental protection, promoting the sustainable development of the sea:

In China, along with the promulgation of the Law on the Protection of the Marine Environment, China has promulgated various legal documents to promote the development of the marine economy along with the protection of the environment, Sustainable use of marine resources, such as the Chinese continental shelf and exclusive economic zone law, the Regulation on management of the use and protection of uninhabited islands ... Similar to China, many other countries have To develop and perfect legal systems and tools for the rational exploitation of natural resources and the environment, promote the sustainable development of the sea, such as the United States through the Law of the Sea in 2000, Law of the Sea since 1997, Australia with Law on Biodiversity Conservation and Environmental Protection which applies comprehensively to the sea. . The formulation and promulgation of laws and legal documents on the sea has created a solid legal basis to ensure the successful implementation of integrated management, rational exploitation of resources and security. Protect the marine environment in many marine countries.

(2) Improve marine governance institutional framework:

Along with the improvement of maritime law, new marine environmental management systems have been developed and developed in many countries to ensure uniformity throughout, reduce administrative costs, promote work Exchange of information and data, achieving high efficiency in the planning of sustainable development of the sea ... In Japan, after the enactment of the Basic Law of the Sea in 2007, Japan established an early authority The integrated maritime policy of the Prime Minister to promote centralized and integrated maritime measures; Or in Australia, following the introduction of a national marine policy, Australia introduced a series of structural adjustments that included the establishment of a national maritime ministerial committee, A national naval office and a maritime steering committee, in which the function of the National Maritime Ministers Commission is to focus on coordinating maritime policy, overseeing maritime zoning planning, , A national marine policy implementation plan, and a marine research priority proposal related to the development and implementation of Australian maritime policy.

(3) Overcoming serious environmental pollution and degradation and strengthening control and prevention of marine pollution sources:

To address marine-based and land-based marine pollution, many action programs aim to tackle serious environmental pollution and degradation with contaminated sites, areas, areas and contaminants. Heavy shocks have been deployed; The response to and remedy of environmental incidents, natural disasters at sea and coastal areas, and the protection and improvement of the environment in key areas in the sea areas are also actively undertaken; Prevention and control of pollution of tourism and maritime activities; Drilling, exploring, exploiting and transporting oil and gas; mining; Fishing, aquaculture; Discharge of dredging and dredging of navigable waterways, marine structures ... is also given priority in many countries.

(4) Promoting Integrated Coastal Zone Management (ICM):

Since its inception, integrated coastal management has been recognized as an effective management framework for achieving sustainable coastal and marine development and is being applied to a wide variety of coastal areas. In the world with many different problems. In the United States, the Coastal Zone Management Law passed in 1972 brought the United States to the forefront in the application of integrated maritime and coastal management. Coastal Management Law has helped to promote and increase the participation and coordination of stakeholders in the delivery of programs related to the coastal zone and the balance between competing interests groups in Coastal zone. In Japan, integrated coastal management is also widely applied to maintain the integrity of coastal ecosystems through conservation and protection, encouraging the sustainable use of marine and coastal resources. The special shoreline is related to the capture and exploitation of marine resources, preventing major material damage caused by tides, waves, winds, floods, earthquakes and waves. Gods and coastal erosion. In many other countries, many major coastal management programs have been developed and implemented to tackle marine pollution and tackle various issues such as fishing, Aquaculture, tourism, biodiversity and sea level rise such as the Latin American and Caribbean Marine Resources Management Program, Victoria Coastal Area Management Program, Cape Town (South Africa), Batangas and Bataan (Philippines), Bali (Indonesia) ...

(5) Ecosystem-based management:

Ecosystem-based management is a unified management approach that focuses on the whole ecosystem, cross-cutting across the system, and the effects and impacts that accumulate due to the activities of the ecosystem. Man made In fact, very early in the process of formation and development of this concept, ecosystem-based management has been applied in many areas for different purposes. In the context of the need for sustainable management and development of the marine environment, the approach to ecological management is considered as the basic principle of national maritime policy in countries such as Australia, USA, Canada. ... and successfully applied in practice in marine management at the Great Barrier Reef Marine Park in Australia, the Bering Sea in the US ...

(6) Planning and spatial planning of marine and coastal areas:

Marine management on the basis of planning, zoning of maritime space and coastal zones is a trend of modern maritime management deployed in many countries. In America, the planning, spatial planning, and coastal zones are one of the priorities for marine policy under President Obama, the proposed Marine Policy Task Force. A planning framework, maritime space demarcation and coastal zone to create a new, integrated, comprehensive, regional approach to:

- Support the sustainable, safe, efficient use of the oceans, oceans and lakes.
- To protect, maintain and restore the sea and coastal zone to ensure highly resilient ecosystems, and to provide sustainable ecosystem services.
- Ensure, maintain access to the sea, coastal zone of the public.
- Promote support in use, reduce conflict and environmental impact.
- Enhancing consistency, consistency in decision-making, minimizing conflicts of interest, reducing costs, prolonging delays, improving planning efficiency.
- Enhance the certainty and predictability in planning to invest in exploiting and using the sea and the coastal zone.
- Strengthen coordination, inter-ministerial, sectoral and national and international stakeholders in the process of planning and planning.

(7) Construct Marine Protected Areas:

Marine protected areas are built to protect and preserve biodiversity, natural resources and cultural values. According to statistics, the number of MPAs is increasing on a global scale. As of 1970, the new world had 118 protected areas in 27 countries, by 1985 there were 470 zones in 69 countries and 298 proposed. Ten years later, the world has made a total of 1306 protected areas. To date, a total of more than 5,000 marine protected areas have been built around the world, accounting for 8% of the total ocean area.

(8) Community-Based Management / Co-management Model:

Community-based marine resource management has been adopted in many countries, especially in developing countries, and is recognized as a cost-effective, cost-effective way to maintain and manage resources. Fisheries, biodiversity protection and other conservation objectives as well as the needs of human livelihood. In the region, the Philippines, Indonesia ... are the first countries to early implement the model of community-based management and achieved certain success. Through this model, local coastal communities are given specific, controlled control over the management of coastal resources. This has strengthened the initiative, promoting greater community participation in sharing responsibility for the state in the effective management and conservation of marine resources.

(9) To attach importance to measures to ensure sustainable livelihoods for coastal communities:

It has been shown that most of the coastal population is now poor and dependent entirely on marine resources. In order to reduce the pressure on resources and protect the marine environment, the emphasis is on enhancing the application of market-based solutions in resource management while addressing career transition solutions. Sustainable livelihoods for coastal communities are also of great concern. So far, in many countries, especially countries with large numbers of fishermen such as China, Indonesia, etc., there have been many activities and programs for sustainable livelihood diversification for coastal inhabitants. Arts and crafts training; Support sustainable aquaculture, build ecotourism program in association with MPAs, train tourist guides for local communities ... and have obtained encouraging results, For example, in China, statistics show a sharp decrease in the number of fishermen involved in fishing (a decrease of 13% from 2001-2004), while the number of fishers who shifted careers through farming Aquaculture has increased in recent years. In the Philippines, the establishment of Protected Areas in the Apo Islands has created more employment opportunities in the coastal tourism sector, according to estimates by more than half of Apo's households engaged in work. In tourism or in California, some fishermen have been involved in supporting the monitoring and research of protected areas.

(10) Integrate climate change adaptation into policy, planning and management of marine resources and environment:

Since the United Nations Framework Convention on Climate Change (UNFCCC), many countries have taken the initiative in integrating climate change into policy, planning and management of marine resources and

environmental protection. mine. In Bangladesh, the Adaptation Program to the National Action Plan for Climate Change Adaptation has been developed to integrate specific adaptation measures into many areas, such as coastal zone management Water Resources, Disaster Preparedness Program. In many other countries, the National Action Plan for Climate Change Adaptation (NAPA) has been developed and developed as the basis for promoting the integration of climate change adaptation into policy and planning. And the management of marine resources and environment to promote more effective response to climate change and management of marine environmental resources such as Butan, Congo, Tuvalu, Tanzania, Zambia ...

(11) Building infrastructure for natural disaster prevention, disaster, coastal erosion control, population protection and response to climate change:

In addition to the construction of technical facilities, infrastructure such as coastal protection walls, dykes, embankments, embankments, canals for flood control, etc. to prevent and reduce damage caused by natural disasters. , Catastrophic causes, biological and non-structural measures such as strengthening biodiversity protection, coastal natural ecosystems to create a solid buffer zone, mitigating damage, enhancing capacity Responding to climate change for coastal people is also implemented and applied in many countries and is considered as a means of mitigating damages and responding to climate change effectively in the context of climate change on The more complicated the process. In Indonesia, Sri Lanka, India, Thailand and Malaysia, the Green Coast Program aims to restore coastal natural habitat through mangroves and coastal plants. Implement and achieve positive results to help protect communities from the effects of climate change including storms, floods, saline intrusion and erosion ... or in Trinidad and Tobago, after Implementing the wetland rehabilitation project, with the support of World Bank, thousands of hectares of wetlands have been planted and restored, the project has created an important opportunity combining the reduction objective. Greenhouse gas mitigation needs to adapt to climate change, while wetland rehabilitation also creates a buffer zone, self shield Important for the impact of climate change and sea level rise ...

(12) Promote investigation, survey, observation and research on marine resources and environment for sustainable use of natural resources and protection of the marine environment:

In maritime nations, marine baseline surveys are defined as mission-critical, platform-and-intensified investment deployments. These baseline data provide important information to help make marine policy work more effective and provide a scientific basis for space planning and the development of areas. The sea is suitable with the ecology of each region, aiming at the sustainable use of natural resources and the protection of the marine environment.

(13) Strengthen the construction and management of database system on marine environmental resources:

In the context after the 1982 UNCLOS came into force, a new order of the sea and the oceans was established, for which the importance of the sea was increasingly well known. Along with that, the Internet has evolved so data storage, management and provision of information are also advantageous and the GIS information system applied to the web has also thrived. The collection, construction and management of information related to the sea is very much appreciated in developed countries such as USA, EU, Canada, Australia ... In the EU, data network named SeaDataNet has been set up as a In large marine data inspection systems with information sources provided by many international agencies and organizations. In Australia, very early efforts have been made to improve accessibility, access to information and data on the sea, which can be referred to as the "Blue Page 2000" operation soon after. By the end of the 1990s, with the goal of being an accessible site, marine data, especially the coastal zone data, was scattered across many national agencies. In addition to information and data lookup tools, Australia has also focused on mapping data to facilitate policy-making, through the use of WebGIS technology. In the United States, the NOAA (Oceanographic Meteorology Agency) and some agencies use the Multipurpose Marine Cadastre (MMC) system for GIS applications to display marine information. The relevant authorities own. Regarding the integrated management of ocean information and marine surveillance, the United States has developed the "Data Communications and Management" (DMAC) system, which is a system The child of the IOOS (Integrated Ocean Observing System), which manages the unified management of maritime data collected from relevant agencies.

(14) Strengthen education, training and development of marine human resources for survey, research and management of marine resources and environment:

Marine education and training has a major purpose in enhancing our understanding of the symbiosis between the sea and the people. In addition, marine education and training also aims to build a team of human resources with knowledge, skills and thinking ability for management, sustainable use and rational exploitation. Raw and marine environmental protection contributes to the sustainable development, peace and prosperity shared throughout the world. Maritime education and training is also the promotion of learning to get to know the sea, understand the sea, protect the sea and use it sustainably. With the important role of marine education and training in building marine human resources for sustainable coastal development, the policy of promoting

marine education and training to date has always been one of the issues. The focus is on marine policies and strategies in many countries around the world.

(15) Raising the awareness of the community about the sea in order to exploit and rationally use natural resources and protect the environment:

In order for the community to better understand and pay more attention to the sea, the publicity and awareness raising on policies and laws related to the sustainable exploitation and use of natural resources and the protection of the marine environment shall be considered by the concerned countries. Mind, push attention. In Japan, in order to increase the public's interest and deep understanding of the sea, the Japanese government has actively propagated and promoted social education and marine education, Disseminate relevant information on the Law of the Sea, addressing universalisation through recreational activities. In the United States, the national maritime policy also identifies education and training to improve understanding and to improve the lack of knowledge of science and the environment through formal and non-formal education. It should be strengthened with targeted projects, continuous assessment and improvement that is the cornerstone of the future sea nation.

(16) Strengthening international cooperation on the sea:

With the importance of the sea, the need for higher and higher development, moving to the sea became a strong movement of the sea nations. With this trend, more and more borders appear on the sea, this situation does not prevent a common perception that the sea is a homogeneous environment, the common property of mankind, It requires high cooperation among nations to keep the sea clean. In an increasingly complex world with many issues of marine resources and environment that transcend national boundaries, international cooperation is not merely a choice but a necessity of nations. old. Over the past years, countries around the world have continued to promote bilateral and multilateral international cooperation in the maritime field. The main areas involved are the promotion of marine science and technology, Disaster at sea, prevention of disaster, control of crime at sea, training of human resources in the fields related to the sea.

3. Conclusions

The problem of exploiting natural resources and protecting the marine environment in many areas and countries is facing many challenges, many resources are exhausted and the marine environment is so polluted that alarming levels cause Out serious damage, hindering the socio-economic development of many countries. The aim of this paper is to understand the current situation of marine resources and environment and to summarize some concrete solutions that are being applied in many countries towards the sustainable management of resources. Raw and protected marine environment.

References

- [1] <http://isponre.gov.vn/home/dien-dan/688-tai-nguyen-moi-truong-bien-van-de-va-mot-so-giai-phap>
- [2] <http://lyluanchinhtri.vn/home/index.php/thuc-tien/item/1654-van-de-moi-truong-bien-dao-o-nuoc-ta-hien-nay.html>
- [3] <http://tapchiquptd.vn/vi/bien-dao-viet-nam/o-nhiem-moi-truong-bien-va-cac-bien-phap-bao-ve/9389.html>
- [4] <http://mtnt.hoinongdan.org.vn/sitepages/news/1098/43860/chung-tay-bao-ve-tai-nguyen-moi-truong-bien>
- [5] <http://baotintuc.vn/bien-dao-viet-nam/cac-giai-phap-gop-phan-bao-ve-moi-truong-bien-20160916074437401.htm>
- [6] <http://khpl.moj.gov.vn/qt/tintuc/Pages/tin-tuc-phap-luat-bao-ve-moi-truong.aspx?ItemID=189>
- [7] <http://www.vtr.org.vn/bao-ve-moi-truong-bien-huong-toi-su-phat-trien-ben-vung.html>
- [8] <http://loigiaihay.com/bao-ve-tai-nguyen-va-moi-truong-bien-dao-c92a14107.html>
- [9] http://danang.gov.vn/chinh-quyen/chi-tiet?id=26669&_c=3
- [10] <https://stnmt.thuathienhue.gov.vn/?gd=11&cn=127&tc=3341>