Integrated coastal zone management in Vietnam - status and emerging problems

Nguyen Van Cong¹, Tran Duc Thanh²*, Dang Hoai Nhon²

¹Graduate University of Science and Technology, VAST, Vietnam
²Institute of Marine Environment and Resources, VAST, Vietnam
*E-mail: thanhtd@imer.vast.vn

Received: 28 July 2020; Accepted: 8 September 2020

©2020 Vietnam Academy of Science and Technology (VAST)

Abstract
ICZM is a correct orientation and feasible towards sustainable development. Due to socio-economic circumstances, there are certain differences in the application of ICZM model in different countries, especially in the developed and developing countries. Although there were successful models in some countries or some places, many activities of ICZM do not achieve high efficiency and do not become a self-reliant process. ICZM in Vietnam has achieved certain results. Over the past 20 years, research projects, pilot projects and implementation projects have significantly contributed to ICZM in terms of improving knowledge, increasing awareness and accumulating experience. Vietnam has a favorable organizational mechanism for ICZM, which is considered as an indispensable orientation for sustainable development. ICZM in Vietnam has a solid legal basis. However, ICZM in Vietnam is not very sustainable, facing great opportunities and challenges. ICM is facing issues that need to be addressed such as theoretical basis, organizational structure, capacity, methodology and sustainable financial resources,... ICZM can only succeed on the basis of mastering the theoretical basis and having creative application in practical conditions of Vietnam.

Keywords: ICZM, Vietnam, emerging problems, opportunities, challenges.

Citation: Nguyen Van Cong, Tran Duc Thanh, Dang Hoai Nhon, 2020. Integrated coastal zone management in Vietnam - status and emerging problems. Vietnam Journal of Marine Science and Technology, 20(4), 369–381.
INTRODUCTION

Under population and economic pressures, sustainable coastal development is an urgent need. Vietnam coast stretches over three thousand kilometers, consisting of many typical ecosystems such as islands, estuaries, lagoons, bays, mangrove forests, coral reefs and seagrass beds,... Coastal natural and human resources are abundant and diverse which allow developing several important economic sectors such as port and waterway transport, agriculture, forestry, fishery, salt production, industry, minerals, tourism - services. These areas have many valuable parks and natural conservation and they are also high population density areas. Human activities in the development of multi-sector market economy have caused many negative impacts on environmental and natural resources and the coast [1]. The impact of climate change had recently increased natural disasters and environmental incidents. In this context, integrated coastal zone management (ICZM) towards sustainable development has become urgent requirement [2, 3]. However, to replicate efficiency in practice, ICZM in Vietnam has overcome many difficulties and challenges, from awareness to reality. Based on the SWOT analysis method (Strengths - Weaknesses - Opportunities - Threats), this article presents some basic issues on ICZM in Vietnam, some major advantages and challenges that we have to face.

CONTEXT OF INTEGRATED COASTAL MANAGEMENT IN VIETNAM

Basic concepts about ICZM

The coastal zone has important economic, social and environmental functions. Coastal management is not merely the state management with heavy administrative but also has “production function” in nature in order to integrate many inputs like labor, natural resources, capital and time to generate the expected product such as a public resort on the beach, marine facilities, ensuring water quality, the stable annual fishing, marine conservation, reducing damage caused by rising sea levels or the potential impacts of climate change [4]. Integrated management aims to coordinate all the stakeholders and the necessary tasks to plan and implement activities in order to protect, develop and sustainably use areas and resources. It recognizes the relationship between different usage activities and potential impacts on the environment, aiming to overcome the inherent breaking in case of management approach by sectors. Integrated management is based on analysis of development aspects, uses conflicting, promotes links and harmonizes different activities.

ICZM is a programme created to manage coastal resources, with the participation of all the impacted economic sectors, government agencies and non-governmental organizations [5]. It is the latest model on management of coasts, linking the partner activities, gathering the parties’ interests and is a coordinate process with non-identical activities. ICZM is a comprehensive assessment by setting goals, planning and management of systematic coasts and resources, with consideration to historical features and traditional culture, conflict of interest and use. It is a continuous process of evolution to achieve sustainable development [6, 7].

ICZM is a repeat, versatile and dynamic process. An improved cycle of ICZM includes information collection, planning, decision making, management, monitoring and evaluation of implementation [6]. ICZM is based on participation and coordination of activities in a consensus of all interest parties to achieve the social goals in a defined coast. In the long term, ICZM goes toward a balance of social, economic and environmental goals, in corresponding conditions with the natural processes [8]. “Integrated” here means integration of objectives and many necessary ways to achieve goals, integration of all policy areas and related sectors, integration of all parts of sea and land in a managed area, and integration of both space and time.

In nature, ICZM has state management function with the concentrated modalities and is connected unity in three government levels: local, provincial and central in the harmony with the laws and regulations of government institutions [9, 10]. Currently, most of the
Integrated coastal zone management in Vietnam

macro-economies of the nations in the world are decentralized market economies that clearly revealed the severe problems on resources and environment, leading to the non-sustainable development, not only in society, environment but also in economy. So ICZM had been set up as a necessity for sustainable development, but the approach is a long way from theory to practice, from idea to success.

Practice of ICZM in some countries

The United States promulgated decree on management of coastal areas in 1972 that is considered the first milestone in the history of integrated management of coasts and oceans. Since then, theory and practice of management of coastal areas have been disseminated to the regions with the international help. By the early years of twenty-first century, there are 380 areas implementing coastal management and after nearly four decades of practice, ICZM gained certain achievements in agreement with the objectives of sustainable development of coastal zone [11]. Some countries had reached good achievements by forming ICZM in the national scale, ensuring the economic growth while protecting the natural resources and environment. However, it is found that these are the rich countries and their population density is low, such as Sweden in Europe [12], or this is a small country like Singapore in Southeast Asia [13]. Anyway, it is a valuable reference model for the nations that expect sustainable development of coastal zone by approach from integrated management.

Most of Southeast Asian countries responded positively to ICZM, at least in time of receiving funding for pilot projects from developed countries and international organizations. Among them, the largest scale projects were the pilot ICZM projects within the framework of the Programme for Environmental Management of the Seas of East Asia (PEMSEA) with the support of the Global Environment Fund (GEF), the United Nations Development Programme (UNDP) and International Maritime Organization (IMO) done in the first decade of XXI century (fig. 1). They were the pilot projects in Shianoukville (Cambodia), Shihwa (Korea), Bali (Indonesia), Klang (Malaysia), Batangas (Philippines), Nampho (Korea), Xiamen (China), Chonburi (Thailand) and Da Nang (Vietnam) [14].

In Malaysia, centralized forms of coastal management towards integrated management had made a good impression with high economic growth, and environmental protection was properly concerned [16]. Philippines gives prominence to ICZM and becomes the country implementing the considerable ICZM projects in Southeast Asia; 25 million dollars per year in different sources was invested for these projects. The projects that received the biggest support from regional programme GEF/UNDP/IMO/PEMSEA have been implemented in Batangas, Bataan, Cavitae, Manila Bay and Puerto Galera,... Among them, the ICZM projects implemented in Batangas based on self-control and self-government was considered successful [14, 17].

With the support of ICZM activities, since 1994, the annual GDP of Xiamen (China) had increased 9–25% without degradation of environmental quality [11, 18]. The first lesson from the success of the ICZM model in Xiamen was the victory of political will through legal assistance, policies and finance with the support of the authorities in order to create a good model for China and other regions. The implementation of policies and strict laws had created consistency and motivation for the execution of ICZM programmes. Consensus of the participating organizations and the interests of the parties were also an important factor to ensure success. Consensus is not only voluntary but also the impact of sanctions in the framework of statutory provisions. The environmental taxes and fees were strictly implemented, which had created sustainable financial resources for ICZM, ensuring that this process self-developed [14, 18]. The available experiences of management ways in development of concentrated economies before also contributed to the success of this model.

However, much effort of ICZM was not really sustainable or not successful, basically related to three main reasons: firstly, lack of political will or weak political commitment at all government levels on policy, legislation and allocated resources to support and sustain the project activities; secondly, conflict between
the involved parties, which made the cracks and lack of efforts in coordination, limiting the associate effectiveness of beneficiary parties in decision making and policy making; thirdly, due to the change of government at both national and local levels, where elected governments did not accept the existing ICZM programme [14]. In addition, ICZM needs to concern interests and the participation of the community, but in many cases, this involvement is formal and brings movement meaning, not natural.

ICZM is considered multi-sector, multi-purpose and multi-benefit and the key to sustainable development. However, this notion is not necessarily acceptable in all circumstances. There are opinions that ICZM is not necessarily the best and decisive way of management, because it is unlikely to succeed due to the weakness of centralized management, is unlikely to become a process “one self-existence”. Many areas still appreciate the role of decentralized coastal management and development of dominant model such as “management by sectors”, “community-based management”. The 22/1999 Law clearly reflects the political will of the Government of Indonesia toward decentralized
management of coastal regions and strengthens the role of community in natural resource management. Concentrated administrative management seemed to create environmental policy applied uniformly in all regions of the country, but with lack of consideration of local issues and the diversity, complex of economy, culture, society; and it may create severe stress that reduces thinking ability and creativeness of the administration and local community [16]. Thailand is the country that has been interested in coastal management for long time, but focused on the decentralized management with based-community management method. It indicates that absolute ICZM should not be implemented anywhere, in any situation, but requires the coordination of many methods managed in an appropriate scale.

Research and implementation of integrated coastal management in Vietnam

Integrated coastal management approach in Vietnam had last over 20 years since the National Project of Science and Technology KHICN.06–07 “Study on building the method for ICZM in Vietnam to contribute to environmental protection and sustainable development” done by the Institute of Marine Environment and Resources from 1996–1999 with two main case studies in Do Son - Cat Ba - Ha Long bay and Da Nang [19]. From 2000–2002, Institute of Oceanography had carried out research tasks to build the method for ICZM in the South Central part with case study in Binh Dinh province according to Protocol Vietnam - India [20]. From 2007–2010, the Institute of Marine Environment and Resources implemented a state project “Scientific and technical arguments on the model of integrated management and sustainable development of the western coastal zone in the Gulf of Tonkin”, coded KC.09-06/13–10. The research results of this project have made important contributions to the theoretical and practical basis for ICZM in Vietnam [10].

A number of projects were carried out with the assistance of finance and experts from some international organizations and other countries. The most successful project in theory and reality could be ICZM project in Da Nang, in the framework of PEMSEA Cooperation Programme phase I (2000–2006) and phase II had been continued since 2009 [21]. The project Vietnam - Netherlands for Vietnam ICZM (VNICZM) in the period from 2000–2006 was conducted in three demonstrations in Nam Dinh, Thua Thien-Hue and Ba Ria-Vung Tau provinces [10]. The cooperation project on ICZM in Ha Long bay (Quang Ninh province) was done by IUCN-Vietnam, Directorate of Fisheries and Quang Ninh province in the cooperation with the National Oceanic and Atmospheric Administration USA (NOAA) in phase I (2003–2005) and phase II (2006–2008).1 The IMOLA (Integrated Management of Lagoon Activities) project sponsored by FAO with the assistance of experts from Italy was implemented in Thua Thien-Hue province from 2005 to 2012, including 3 implementation phases with a total investment of nearly 3.5 million US dollars. The project has contributed to the implementation of the lagoon fishery management strategy based on the local fishing community. Only ICZM project in Quang Nam province (2005–2007) was the first provincial model of ICZM implemented by scientists and managers of Vietnam, following the experience of Da Nang [10].

These activities had importantly contributed to disseminating knowledge, raising awareness and collecting experience of ICZM in Vietnam [2, 3, 21]. In different levels, these projects had focused on collection, evaluation and database building and dissemination of information, including web pages that serve for ICZM; they were also interested in establishing materials and management capacity, starting from the establishment and operation of the project office and group of experts, group of consultants to set up the short-term training courses, training GIS, nominating person to other countries for learning experience. The attention was paid to the participation of community in ICZM, although it seemed formal than natural. The

1Nguyen Chu Hoi (Chief author), 2005. Planning for integrated coastal management of Ha Long Bay, Quang Ninh. Final report on international cooperation mission Vietnam - United States under protocol. Documents are preserved at the Ministry of Science and Technology.
action plan and the strategic programmes were interested in drafting. However, ICZM strategy was only approved in 4 provinces Nam Dinh, Thua Thien-Hue, Da Nang and Quang Nam as the orientation for long-term activities. The projects had priorily implemented some concrete activities: The project IMO/GEF/PEMSEA in Da Nang emphasized pollution prevention; VNIZCM cooperation projects with Dutch had priorily managed disasters (erosion, sea level rise,...) related to climate change and wetland protection; project IUCN/NOAA/MOFI in Quang Ninh paid attention to marine-protected areas with the participation of communities, the phase II had built a framework of ICZM in Quang Ninh province - Hai Phong city and it had been signed by two local authorities. IMOLA project/FAO specially focused on the management of fishery activities in the Tam Giang - Cau Hai lagoon.

Besides the remarkable results, ICZM in Vietnam also revealed many problems and difficulties and had to face big challenges. Recently, many legal documents related to integrated coastal management have been issued.

Vietnam has a good environment for the implementation of ICZM. The institution is stipulated by the Constitution of the Socialist Republic of Vietnam in 2013 suitable with requirements of ICZM in which the government manages all through state agencies with unified and centralized management method. Leadership roles of the Communist Party, the stability of political regime and government are very important for the sustainability of the processes of ICZM that should be performed in very long time by cycle and cycle.

Very early, since 2007, the Government issued Decision No. 158/2007/QD-TTg approved programme for ICZM of North Central part and Central part to 2010, orientation to 2020 [22]. The overall goal of the programme is to strengthen the management capacity, protection, use and exploitation of natural resources and environment, serving for sustainable development of the provinces and cities under the Central Government through the application of ICZM method. The decision has clearly expressed political will of government about this issue. In 2014, the Prime Minister issued Decision No. 2295/QD-TTg on approving the integrated coastal management strategy of Vietnam up to 2020, with a vision to 2030 [23]. Law on natural resources and environment of the sea and islands No. 82/2015/QH13 and Decree No. 40/2016/ND-CP detailing the implementation of a number of articles of this law emphasize the integrated coastal resources management programme, which is understood as part of integrated coastal management programme.

However, the real projects on integrated coastal management are very limited. Many movements in general management of littoral zones in coastal provinces are still very formal and movement-oriented. In fact, integrated coastal management activities do not bring the expected benefits. In many coastal areas, the environment is still polluted, natural resources are over-exploited and conflicts of benefits in coastal areas are increasing.

EMERGING PROBLEMS FOR INTEGRATED COASTAL ZONE MANAGEMENT IN VIETNAM

Requirements for ICZM in Vietnam

With this understanding and reality by research and implemented activities, some basic issues about ICZM in Vietnam can be drawn.

Objectives of ICZM in Vietnam are to build and implement programme ICZM including the management of cycle-oriented sustainable development in terms of integration and expansion of international cooperation, based on the reasonable use and protection of natural resources - environment, natural and cultural conservation, natural disaster prevention, harmonization of use conflicts and ensuring the community interest.

ICZM process should perform functions such as production, forecasting and planning, adjustment and addition, organization, set-up and link; propaganda and education, monitoring and evaluation of activities. The environmental function is the important scientific basis for ICZM [24]. A reference model of ICZM should be identified in terms of management purposes, steps in a management cycle, subject and mode of management, the
scope and objects of management; scale and mechanism of management; activity frame and the priority issues of management; process of management [25]. ICZM should be based on the main principles for the feasibility and efficiency, integration and harmonization and ensuring community interest. ICZM should be based on criteria such as sustainable development, economic development speed-up, environmental protection, conservation of nature and culture, security and defense; contribution to adjustment of territory zoning, master plans for local region or area. From that, tasks of ICZM were identified: building informatics system and database, concentrating on GIS data, serving ICZM process; building management system, infrastructure and technology, enhancing human resources for ICZM; proposing and approving policies, regulations to effectively make legal aspects and mechanism for ICZM; building strategy of ICZM, management plans and planning map system for natural resource use and environmental management serving for long-term management; proposing and implementing projects to serve management process and contribute to gaining manage objectives, toward sustainable development; attracting and involving the participation of community and stakeholders in order to protect their benefit and ensure the effective and long-term success of ICZM; overall monitoring ICZM processes including administrative management, coastal zone condition (physic condition, society, natural resources and environment) to adjust and orient management process effectively; comprehensively assessing ICZM activities, the positive impacts and limits, the needed adjustment; thus the new cycle of ICZM will have better results and experiences in order to multiply this model.

**Legal status for ICZM**

The current system of legal documents on natural resources, environment and sustainable development had supported much ICZM activities strongly [21, 26]. However, implementation of laws is not strict and there is lack of sanction, which was the big limit of ICZM. Political will on sustainable development in general and ICZM in particular is positive at the national level. However, at the local level, the change of government over terms or weak political commitment from governments can lead to lack of resource allocation and have influence on the ICZM process.

Management experience in previously concentrated economy was valuable reference for centralized management in protection of natural resources and environment of ICZM process. Also, management experience of the multi-sector socialist-oriented market economy nowadays will also contribute valuable experience, avoid the bureaucracy from concentrated administrative mechanisms.

**Knowledge of ICZM**

Some perceptions about ICZM in Vietnam are not very accurate in terms of theoretical basis and international practices. Right awareness of the role, the demand and method of ICZM needs to be disseminated and grasped within the management level before raising the community. It should avoid thinking that ICZM is the work of researchers and management of coasts is the work of authorities. ICZM does not only exist in the project, but project is the start point for performance and testing, so that when the ICZM activities are stable, it will be transferred to the management agencies for regular maintenance.

Awareness and understanding of the practical experience of ICZM in Vietnam are still limited, even some concepts are not clear, and it can lead to inaccurate actions. For example, “stakeholders” are often understood as representatives of government management organizations and it often lack representatives of economic sectors in coastal areas. Some theoretical issues is not clarified, especially the relevance between the organization structure of ICZM and institution of our country. The acquisition common theories and experiences from other countries without selection can lead to formal and dogmatic ICZM activities. For example, a cycle of ICZM of PEMSEA includes six steps (fig. 2), but the first step “preparation” could not be considered as implementing period in an ICZM project in Vietnam’s condition. Therefore, an ICZM cycle of Vietnam has been proposed to be shortened to 5 steps [10]. Although an awareness of the
management role of government and centralized management capacity has right direction, but it does not show the highlights of Vietnam, it may be influenced by many international advisories in the demonstrative projects. Local reality characteristics had been noted, but the priority issue choice in the project activities was individual, reducing the multi-purpose aspect of an ICZM project.

![Figure 2. The ICM development and implementation cycle [11]](image)

To serve the determination of action framework, plans or strategy of ICZM, selecting priority issues and preparation of environmental documents is first important step, which requires informatics system, comprehensive and sufficient data. However, the gaps in information are a big issue because the basic investigation and monitoring of natural resources and coastal environment were not synchronized with enough confidence and objectivity. The addition of required documents in short time for gaps in important information within a project cannot be met.

**Scope of ICZM**

The scope of ICZM in Vietnam coast is a topic that should be discussed and clarified. The scope of managed space is defined by natural or administrative boundaries? The dissimilarity between two boundaries sometimes makes confusion for the selection of managed space. We should not depend on natural boundaries too much but the importance is to determine which space should be managed and how far it should be expanded to have feasibility, and how wide it should be not to destroy the whole of a coastal natural entity. Determining the scope of the coastal area is an important matter for further consideration. By the nature of land - sea interaction, the sea boundary of coastal areas in Vietnam should reach a depth of 30–50 m [27]. However, according to Decree No. 40/2016/ND-CP detailing the implementation of a number of articles of the law on natural resources and environment of the sea and islands (2015), coastal zone includes coastal communes landwards and has the outer limitation far 6 nautical miles from the lowest water level. In China, the State Oceanic Administration (SOA)
defined the coastal zone as 5–10 km inland and 20 m isobath seawards [18]. In Malaysia, a proposal by the Economic Planning Unit in 1992 had defined the coastal zone extending 5 km inland from coastline/shoreline and its seaward limit is 200 nm from coastline covering the exclusive economic zone” [28]. Also, the seaward limit of the coastal zone in Singapore is extended to a maximum distance of 200 nautical miles from coastline [29].

At present, there is tendency to get province scale as basic scale for ICZM. It may be a right choice in conditions that most of coastal districts of 28 coastal provinces and cities are moderate on population and area. However, in some cases, this model meets some shortcomings. Many coastal provinces in Northern and Southern parts share big estuaries and river mouths together, so that an half of this estuary follows ICZM of this province, but another half follows ICZM of other province, or even an half of this river follows ICZM while another half does not. The similar situation can also occur in the case that two or more provinces share a natural entity such as a peninsula (e.g. Da Nang city and Thua Thien-Hue province sharing Hai Van peninsula) or a bay (e.g. Hai Phong city and Quang Ninh province also have the coastal space of Ha Long bay). Therefore, ICZM by provincial administrative unit level should not be the only model, but the models under provincial level can be supplemented, for example, important island districts such as Phu Quoc and Co To, etc. Especially, it is necessary to have ICZM model for a natural entities such as a natural bay, a large estuary or an island in order to overcome limits of provincial administrative unit level model and to demonstrate the dynamics, creativity and diversity, provided that it meets general principles and objectives of ICZM. On the other hand, there is formation of coastal socio-economic development zones such as the Northern coastal region, North Central coastal region, South Central coastal region and Southern coastal region. On 10/7/2008, the Prime Minister issued the Decision No. 865/QD-TTg on approving the development plan of the Northern coastal region to 2025 year and the view to 2050. The uniformity and completeness of a coastal part on natural, social and economic conditions give common issues to set up an ICZM model at regional level. Regional model may be considered as a typical characteristic of Vietnam that makes an ICZM system at national, regional and provincial levels (provinces, cities under central government and administrative units under province). However, organizational structure, framework, strategy and action plan at all levels must be consistent and identified on functions and tasks. Malaysia also has ICZM model at state level, although these states are not at large-scale like Vietnam.

Subjects of ICZM in Vietnam coast should be clarified. Natural resources and environment are certainly the key subjects of ICZM and they belong to managing and protecting responsibility of the state, because the investment companies, industries and other organizations and individuals in the market economy are hardly interested in that due to their own benefit. But the economic activities within the managed space of ICZM are subjects of this process? ICZM programme do not replace work of other committees and departments, as well as not play management role to cover all. But certainly, ICZM needs to consider socio-economic activities that impact on environment and natural resources or are subjected to ICZM process, both in promoting or restricting these development activities, through participation role and responsibility of benefit parties, especially economic benefit. This issue needs to be continued, clearly complemented and clarified through practical experience with particular circumstances.

**Organization of ICZM implementation**

Currently, the national agency for organization of ICZM by function is the Vietnam Administration of Seas and Islands (VASI) under the Ministry of Natural Resources and Environment. This is a new point of institution, but in the first phase it will not be advantageous due to lack of interdisciplinary mechanism and policies for the Sea and Islands General Department of Vietnam to coordinate with other ministries, provinces and cities under Central Government implement of ICZM.
One of the perquisites for the success of ICZM process is operation system, group of experts and consultants and training of human resources. After many years for approach, we almost do not have experts on ICZM in accordance with the right meaning of the word. One of difficulties is that the ICZM needs to be approached by methodology of social science, and it also needs a deep understanding on managed objects that belong to the natural science. The consultant experts, the scientists participating in project can come from research institutions, universities and even from international organizations. However, according to the organizational structure, the human resources that directly work at the project office must be local officials (fig. 3). Currently, these human resources are still small in quantity, accompanied by limit of basement theory on integrated management, not enough capacity to acquire selective overseas experiences and to give recommendations as well operate activities within their responsibility. It is a difficult reality which can be improved through training and preparing human resources in the short term and the state should have concerns about it in the macro-strategy in the long term.

Figure 3. ICZM institutional structure for provincial level [10]

**Sustainable financial resources for ICZM**

Determination of sustainable financial sources is very important to ensure the long-term existence and effective operation of an ICZM programme. Not only in Vietnam, many ICZM activities in other countries are not self-reliance process due to lack of stable financial source and project will be stopped if it runs out of funding. The potential sources must be from the state budget first, to help maintain the system and ensure the activities periodically, similar to the norms paid for administrative units at present. Environment - natural resources tax and the environment fee should become the main and regular support source for ICZM. Funding from the implementation of projects related to natural resources and environmental protection in the scope of managed area that is appointed or selected by the current regulations is also important additional source. In addition, there are other financial supports from national and international sources, the voluntary contributions from organizations and individuals.

In Vietnam, up to now, ICZM funding has mainly been from the state budget, very little attracted from social capital. Besides creating sustainable sources, it is also necessary to determine the usage mechanism of invested finance in accordance with the activities of ICZM in order to stabilize such activities such
as operation of managed system, maintenance of informatics systems, monitoring and assessment of environment, consultation and petition of planning adjustment and implementation of projects on natural resources and environment protection,... It is also essential to have mechanism for formation and operation of ICZM funds as the basis for activities of monitoring projects, research and application issues in the framework of ICZM. This is different to financial usage for purely administrative management. Sustainable financial investment must be associated with the self-reliance existing process of ICZM programme. If the financial source is subsidized by state with the concentrated mechanism, it will generate “bureaucracy” and cannot guarantee the long-term self-reliance process of ICZM. But if there is no fundamental support from the state budget, it would be lack of foundation and stability. Therefore, the financial management mechanism here is in the form of administrative units with income, semi-self-control model to enhance the creativeness, dynamics of management team, professionals and staffs in organization and management system.

Interest conflicts

One of the most important criteria of ICM is to minimize conflicts of interest. In ICZM project in Vietnam, an use conflict is a sensitive issue and often avoided. We cannot develop multi-discipline, multi-benefit, multi-purpose without facing and solving use conflict. Use conflicts in coastal areas usually occur because of special disputes, resource dispute and it has negative impacts on the environment and also affects different interest groups. Forms of conflict can occur in two or more sectors (tourism - fishing - navigation) by one-way or multi-dimension, it is possible occur in a sector (aquaculture and fishing), between individuals and communities, between nature conservation and economic development. Conflicts can occur when it decides direct use value or indirect use value or non-use value of the same resources. However, the most worrying conflict is between the units taking part in ICZM process that can lead to the cracking of the programme.

Stakeholder and community involvement

It would not be able to successfully implement ICZM towards sustainable development if community benefits are not guaranteed. That benefit is not only materials but also health and spirit culture. ICZM model must be community benefit-oriented and contribute to eliminating hunger and reducing poverty. ICZM has to pay attention to protection and maintenance of traditional resources, improvement of livelihoods, creation of new jobs, preservation of environmental quality, respect of spirit and preservation of cultural heritage. To ensure the right interests and consensus of community, the ICZM process needs to have their participation. ICZM in Vietnam needs to avoid two excessive tendencies. The first tendency is management of the coast which is similar to governance, the absolute law system and sanction measures but ignores education, propaganda, self-awareness of community and involvement parties. The second trend is ICZM having movement style in which the involvement of communities is appreciated but the role of state management is ignored. In fact, community-based management is often undertook by non-governmental organizations with a certain role in the appropriate scale and time, it may have certain contributions but it cannot replace the concentrated management role of the state during ICZM process.

The participation of the interest parties in ICZM activities in Vietnam is not clearly defined. Community is a crowded component that has big beneficiary both in materials and spirit related to ICZM programme and their participation is always highly appreciated. However, besides, there are other beneficiary parties, especially the economic benefits represented by companies, state or private enterprises, economic corporations. They develop investment projects and are important stakeholders. They should be clearly defined in terms of involved mechanisms, shared responsibility and should be considered as an important resource for consultation, implementation of sanction and have rights to inherit benefits from ICZM process.
CONCLUSION

The experience from other countries is very significant for the selection of ICZM model in Vietnam - a country where social organization is an advantage for this management method. Besides the initial results, ICZM are facing problems on the theory basis, mechanisms, capacities and method; in addition to the provincial model, it needs to build some other models, including regional model or the natural geo-system model. To ensure that ICZM become a self-reliant process, it must determine sustainable financial investment mechanisms and not avoid solving conflicts. ICZM must be done towards community benefits and beneficiary parties, contributing to eliminating hunger and reducing poverty. It should avoid two excessive trends in ICZM process: the governing style, absolute law and sanctions, or movement-style with the participation of community but ignoring management role of the state.

From awareness to efficient practice is a difficult journey and it needs the political will of authority levels from central to local, as well as a solid theoretical basis, the creativity application in Vietnam condition.

Acknowledgements: The authors thank the prime senior researcher task coded NCVCC23.01/20–20 for supporting the research of this article.

REFERENCES

[1] Tran Duc Thanh, 2007. Sustainable development of Vietnam’s sea. Science Activities, (574), 13–18.
[2] Nguyen Huu Cu, 2005. ICZM of Vietnam. Conference Proceedings of the 30th Anniversary of Vietnam Academy of Science and Technology, 3, 245–256.
[3] Nguyen Ngoc Sinh, Hua Chien Thang (editors), 2003. ICZM - practical experience in Vietnam. Publishing House of Labor, Hanoi.
[4] UNEP, 1996. Guidelines for integrated planning and management of coastal and marine areas in the wider Caribbean region, UNEP Caribbean Environment Programme, Kingston, Jamaica.
[5] Clark, J. R., 1996. Coastal zone management handbook. Lewis Publishers, 694 p.
[6] Olsen S. B., Lowry K. and Tobey J., 1999. A manual for assessing progress in coastal management. Coastal management report. #2211. The University of Rhode Island. Coastal Resources Center, Graduate School of Oceanography, Narragansett, RI 02882 USA, 61 p.
[7] UNCED, 1992. Agenda 21, The Rio Declaration on Environment and Development. Rio de Janeiro, Brazil.
[8] European Commission, 1999. Towards a European ICZM (ICZM) strategy - General principles and policy options - EU demonstration programme on integrated management in coastal zones 1997–1999.
[9] UNESCO, 1994. Executive summary. International workshop on ICZM (ICZM). IOC Workshop Report, No. 114: 66 p. Karachi, Pakistan. 10–14 Oct. 1994.
[10] Tran Duc Thanh, Nguyen Huu Cu, Do Cong Thung, Tran Dinh Lan, Dinh Van Huy, Pham Hoang Hai, 2011. Orientation for the ICZM in Northern Vietnam. Publishing House for Science and Technology, Hanoi. 250 p.
[11] Chua, T. E., 2001. An analysis of the application of integrated coastal management - linking local and global environment concerns. www.coastman.net.co/publicaciones/mizc/(0079).pdf.
[12] Ackefors, H., and Grip, K., 1995. The Swedish model for coastal zone management. Swedish Environmental Protection Agency. Printing Gotab. Stockholm. 83 p.
[13] Chia, L. S., 1992. Singapore’s urban coastal area: strategies for management (Vol. 9). WorldFish.
[14] Yu, H., and Bermas, N. A., 2004. Integrated coastal management: PEMSEA’s practices and lessons learned. www2.unitar.org/hiroshima.
[15] PEMSEA (Partnerships in Environmental Management for the Seas of East Asia), 2018. Course 1: Understanding Integrated Coastal Management (ICM) - Model Course on ICM. Instructor’s Manual. Global Environment Facility/United Nations
Development Programme/Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon city, Philippines. ISBN 978-971-812-045-3. 212 p.

[16] Siry, H. Y., 2006. Decentralized coastal zone management in Malaysia and Indonesia: a comparative perspective. Coastal Management, 34(3), 267–285.

[17] Chua, T. E. (editor), 1996. Coastal environmental profile of the Batangas bay region. MPP-EAS Technical Report No. 5, 148 p. Published by International Maritime Organization (IMO). ISBN 971-91646-1-1.

[18] Lau, M., 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(2), 115–159. https://doi.org/10.1016/j.ocecoaman.2005.03.002.

[19] Nguyen Chu Hoi, 1997. An approach to ICZM and application compatible with Vietnam conditions. Proceedings of the first workshop: Approach to integrated coastal zone management in Vietnam, Hai Phong 16-17 April, 1997, pp. 1–12.

[20] An, N. T., Phung, N. K., and Chau, T. B., 2008. Integrated coastal zone management in Vietnam: Pattern and Perspectives. Journal of Water Resources and Environmental Engineering, 23, 297–304.

[21] Hua Chien Thang, 2008. Integrated coastal zone management towards sustainable development in Vietnam. Journal of Water Resource and Environmental Engineering, (23), 305–313.

[22] Prime Minister, 2007. Decision No. 158/2007/QĐ-TTg on approving the program for ICZM of North Central part and Central part to 2010, orientation to 2020.

[23] Prime Minister, 2014. Decision No. 2295/QĐ-TTg on approving the integrated coastal management strategy of Vietnam up to 2020, with a vision to 2030.

[24] Ho Thi Thu Thuy, Phan Anh Hang, Nguyen Hoang Son, 2019. Scientific basis of integrated management of coastal area in Thua Thien-Hue province by environmental function. Journal of Science, University of Education, Hue University, 51(3), 170–182.

[25] Thanh, T. D., 2009. The priority issues for integrated management of the Western coastal zone of the Gulf of Tonkin. Vietnam Journal of Marine Science and Technology, 9(4), 127–146.

[26] Nguyen Ba Dien, 2010. Vietnamese law on integrated coastal zone management. Journal of Science, Hanoi National University, 26, 155–166.

[27] Thanh, T. D. (2015). Discussion on coastal zoning in Vietnam. Vietnam Journal of Marine Science and Technology, 15(1), 1–12. https://doi.org/10.15625/1859-3097/15/1/4155.

[28] Kamaruddin, H. (1998). Coastal Zone Management in Malaysia-Pollution Control. Jurnal Undang-undang dan Masyarakat, 2, 46–55.

[29] Chia, L. S., Khan, H., and Chou, L. M., 1988. The coastal environmental profile of Singapore (Vol. 499). WorldFish.