



Тас Ан Nguyen¹, PhD, Prof., Head of Department, **Nickolai V. Shadrin**², PhD, senior res.

¹ Institute of Oceanography, Nha Trang, Vietnam

² A. O. Kovalevsky Institute of Biology of the southern Seas, National Academy of Sciences of Ukraine, Sevastopol, Ukraine; E-mail: snickolai@yandex.ru

INTEGRATED COASTAL ZONE MANAGEMENT IN VIETNAM: FIRST STEPS, GOALS, FRAMEWORK

Vietnam's coastal zones are some of the very overexploited in the World with consequent degradation of their ecosystems and damage to public welfare. Implementation of Integrated coastal zone management (ICM) is very important task for Vietnam. We analyse and describe the results of past of Vietnamese policies, legislative and institutional frameworks that are relevant to coastal zone issues and establishing some scientific basis for a management strategy that can be formulated and discussed: goal, objectives, action, and priority activities for the next near 10 – 20 years.

Key words: Integrated Coastal Zone Management, coastal zone, Vietnam

The transition to sustainable development is the general strategic aim of human society development. This is the global general trend [37]. The introduction of Integrated Coastal Zone management (ICM) is regarded as an integral part of Agenda 21, a strategic plan of humanity activities, adopted by United Nations, aimed at the transition to sustainable development. The ICM strategies determine the basic principles of the transition to sustainable development in littoral regions [33]. It is especially important for countries with long coastlines. The gist of the ICM conception may be determined as follows [32]: ICM is a dynamic and constant process by which the gradual transition to sustainable development is carried out in littoral regions. The process unites the interests of governments and local people, science and business, managers of different levels and non-government organizations when making and realizing plans of sustainable use and preservation of coastal ecosystems (land, coastline, and sea) and all resources. The main idea of such planning is to improve the living standard of local people under conditions of preservation of normal ecosystem functioning and biodiversity. It is necessary in order that the future generations will be able to satisfy their wants. Despite the common characters of the basic principles of ICM their

practical realization must take into account the natural as well as social and cultural features of a region [31]. An analysis of regional features will also allow developing the common theoretical basis of ICM. In this work the authors analyze the present situation connected with the introduction of ICM in Vietnam. Sustainable development, with harmony between socio-economic development and environmental protection, is the strategic orientation of Vietnam now [24, 30]. With the coastline/area ratio of 0.01, Vietnam can regard as a marine country [11]. Research results show that development in the coastal zone hasn't been commensurate with its potentiality and has created many problems [23, 35, 36], forcing us to reconsider to focus on enhancing management capacity. Marine and coastal zone management is an extremely difficult and complex mission for Vietnam, yet this country is at present very vague in theory and confusing in practice, though this is a very pressing issue with high sociality and humanity, especially in the present context where the world is towards globalization, Vietnam is integrating, preparing to enter WTO [22, 30].

Based on the practical performance we have carried out integrated coastal management in Vietnam, together with analyses of lessons from national and

international integrated coastal management projects in recent years/ We want to introduce the coastal management framework in Vietnam and the possibility of applying it into practice, with the aim to exchange and learn more about the wide knowledge and practical experience of national and international experts.

I. Awareness of Integrated Coastal Management (ICM)

1.1. Promoting ICM is to meet the pressing need of development

ICM program is designed to overcome problems caused by the inherent sectoral management. It aims at balancing socio-economic development with environmental protection, solving effectively problems concerning the utilization of resources, disaster prevention, protection and maintenance of coastal ecological functions [7, 13, 18, and 23].

The reasons and motivation for promoting ICM are numerous, both global and local, and totally depend on the political and institutional characteristics and the development context of each nation and locality. Thus, there is no general framework for ICM, which can be applied everywhere, for every coastal zone. It is difficult to apply ICM experience and lessons of other countries to the specific conditions of Vietnam, because of the differences of political institution, economic development, intellectual standards, habits, custom, geographical and ecological conditions among countries.

The need for ICM in the Vietnamese coastal provinces originates from practice. It relates closely with resource uses, disaster prevention, protection of coastal ecological processes and functions and promoting a multi-sectoral and multi-purpose management mechanism with wide participation of local communities. There are 4 common pressing causes for promoting ICM in Vietnam:

1. The critical depletion of coastal resources and environment: 1. coral reefs in Vietnam are perishing, 96 % of coral reefs are at risk, of which 75 % are seriously and very seriously threatened; 2. marine fishing yield has reduced from 1.2 ton/HP (horsepower) in 1985 to 0.45 ton/HP in 2006 [26, 27, 28]. Then the entry of Vietnam into WTO will change some key traditional industries; increase the constraint on coastal resources and environment.

2. The desire to develop marine economy, to eliminate hunger and alleviate poverty, to increase economic benefits from marine- and coastal-based indus-

tries such as fishing, tourism, navigation and ports, and to develop an employment of unexploited coastal and marine resources such as marine transportation, extraction of offshore petroleum and minerals, extensive mariculture... This is showed clearly by strategies for exploiting Van Phong bay (Khanh Hoa province), developing Dung Quat economic zone and Chu Lai open economic zone, promoting continental shelf oil and gas extraction.

3. The intention to restrict and overcome the limitations of the stagnant, backward and sectoral administrative systems, to reduce the sharply increasing conflicts during the development process (Fig. 1).

4. Finally, the integration policy is promoting Vietnam to share, to shoulder the responsibility for international vital issues and to together solve the global challenges.

To carry out its commitment with international development programs, Vietnam has carried out a number of concrete actions such as working out plans for marine and coastal uses, environmental impact assessment and monitoring programs, natural and man-made disaster prevention plans, conservation and rehabilitation of important ecosystems, multi-sectoral integrated planning, national guidelines for planning and integrated development strategies in order to maintain biodiversity and productivity of marine species and ecosystems in South China Sea. Vietnam has also paid attention to introduce ecological understandings and traditional cultural and social knowledge into coastal management and encourage community participation in the decision-making process. Documents on marine environmental protection: Law of environmental protection (1994); National biodiversity action plan (1995); National strategy for environmental protection for the period 2001 – 2010, Resolution on sustainable development (2004) have been promulgated and widely implemented. A number of international cooperation programs on ICM between Vietnam and Sweden, India, Netherlands have been initiated (Fig. 2) [21 – 23]. In its policies, Vietnam is strengthening efforts to solve the questions of land-based and sea-based marine pollution. Vietnam values precautionary approach above responsive measures to prevent marine environmental degradation [9, 30]. Priority areas are development planning, sewage management and control, river basin and coastal zone management, land-based pollution and chemical control, control of excessive uses such as overfishing, excessive aquaculture, overtourism [9, 22].

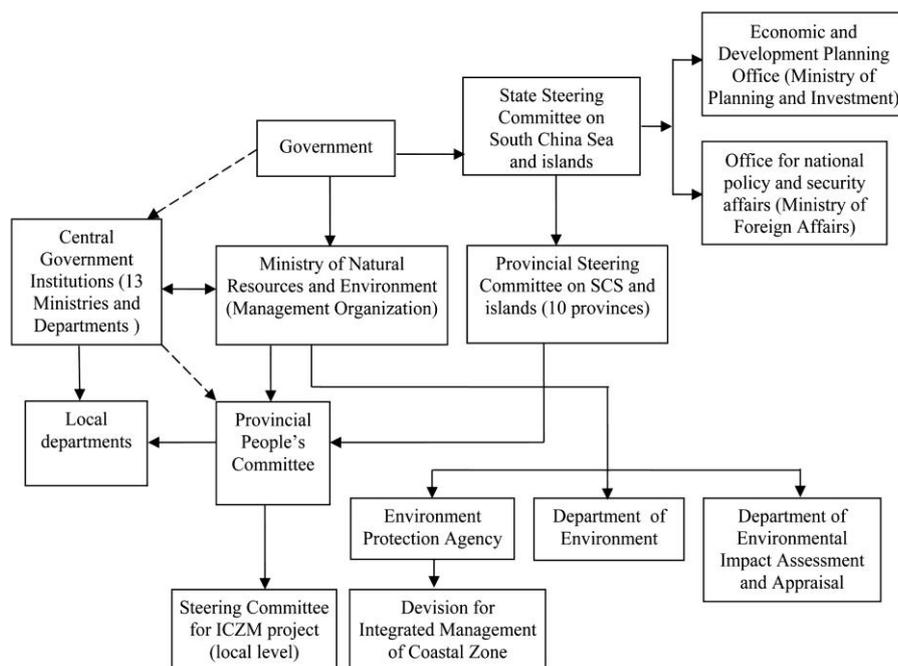


Fig. 1 Current framework for marine and coastal zone management in Vietnam

Рис.1 Современная структура менеджмента прибрежных и морских зон во Вьетнаме

1.2. Management issues in the coastal zone of Vietnam.

Like other countries in Southeast Asia, in the process of ICM [4, 10, 14 – 17, 19, 38], Vietnam should prioritize 4 management issues: population management, management of coastal uses and coastal ecological functions, management of those impacts which affect human and environment and administration management. Current population of Vietnam is over 84 million, and it will increase to 130 million in year 2050 [2, 11]. Vietnamese coast is one of the most densely populated regions in Southeast Asia. Within the next 20 years, more than 35 % of Vietnamese population will inhabit at littoral areas. This is the common tendency of all developing countries: people are moving from rural to urban area, from the hinterlands to the coasts, where there are more economic, social and recreational development opportunities. Management of urbanization explosion in the coastal zone is one of the most difficult tasks of planning.

The Vietnam's coastal zone uses for many purposes: 1) employment of resources such as land surface, water surface, fishing, forest, oil and gas, mineral mining etc.; 2) use of coastal infrastructure to develop maritime industries such as marine transportation, sea ports, coastal engineering for coastal protection and national defence; 3) for tourism, recreation; 4) to protect the coastal ecological functions, for conservation and protection of biodiversity. All these current traditional and common uses of coastal zone can conflict

with each other, cause damages to resources and environment and create many social problems in the coastal zone [13, 23].

Management of adverse impacts which affect human coastal uses is to manage waste, pollution, natural disasters (flood, storms, erosion, tidal flow...) and global climate changes. This is difficult because up to now, no one has "paid for disaster management activities and compensated for natural disaster damage" [13].

The last management issue is administrative management, the institutional issue. It includes questions such as law conflicts, multi-sectoral integration and coordination, international cooperation, organizational capacity, public awareness and participation, law system, land and water surface ownership, integrated planning, user conflicts, lack of alternative livelihood, equality [7].

Experience from many countries show that the most of coastal management issues can be identified by proper consultative meetings with local community and authorities, and non-governmental organizations concerned. Of course not all management issues can be solved at once, a lot of time may be required [7].

During ICM preparations, when identifying and setting priorities for key issues, great attention must be paid to public needs for coastal goods and services, to the conflicting uses of coastal resources, to the impacts of natural disasters (coastal erosion, flood, land slide, storms, drought...) on the natural ecosystems, and to potential activities such as investment

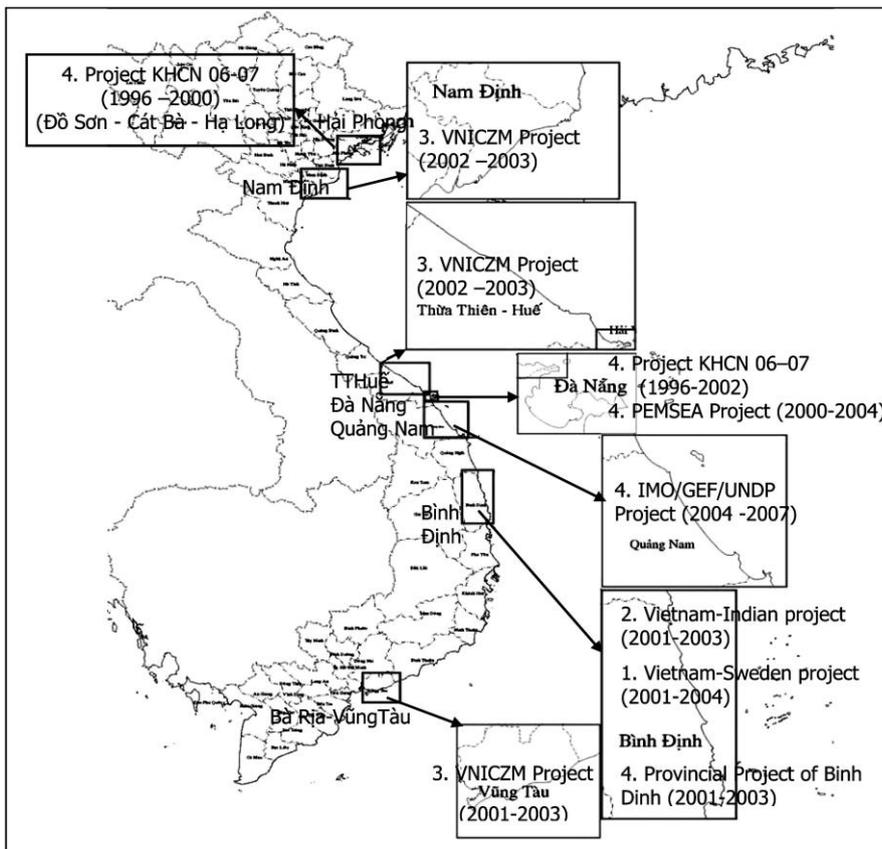


Fig. 2 Integrated coastal management sites in international cooperation program: 1 - Vietnam-Sweden project (SIDA/SAREC), 2 - Vietnam-India project, 3 - Vietnam-Netherlands project (VNICZM), 4 - project of the Environment Protection Agency
 Рис. 2 Районы реализации по Комплексному управлению прибрежными зонами в рамках Международных кооперативных программ: 1. Вьетнамско-Шведский проект (SIDA/SAREC), 2. Вьетнамско-Индийский проект, 3. Вьетнамско-Нидерландский проект (VNICZM), 4. проект Агентства по окружающей среде

and development opportunities of private sector in aquaculture, fishery, tourism, harbour.

Identifying and setting priorities for key issues is the basis for the identification of objectives and criteria used for monitoring and assessment of ICM program for adjustment and addition during the whole development process.

1.3. Goals and functions of ICM program.

The goals of integrated coastal management are to achieve sustainable development of coastal and marine areas, to reduce damages of natural disasters and to maintain essential ecological processes, typical ecosystems and biodiversity in the coastal and marine areas. Integrated coastal zone management is multi-purpose oriented: it analyzes implications of development, conflicting uses, and interrelationships among physical processes and human activities, and it promotes linkages and harmonization between coastal and ocean activities of different sectors and localities.

In sum, ICM is a dynamic process by which proper decisions are made based on analyses and considerations to ensure the harmonization between development uses and the protection of marine and coastal resources, environment and ecological functions. In other words, this is the “art” of integrating

harmoniously development plans with plans of environmental protection and social stabilization in the littoral areas.

In principle, integrated management differs much from sectoral management. Integrated management is designed based on the principle of ensuring that the decisions of all economic sectors and all levels of government are harmonized and consistent with the national coastal policies [8].

From experiences of several countries [8, 10, 29, 33, 34], the major functions of ICM in Vietnam are identified as follows:

- *Area planning* with the primary objective of optimizing the economic and social development opportunities that the marine and coastal ecosystems can support, proposing plans for present and future uses of coastal and marine areas, with a long-term vision.

- *Promoting economic development*: promote appropriate uses of coastal and marine areas, e.g aquaculture, ecotourism, port development.

- *Management of resources*: protect the coastal and marine ecosystems, preserve biodiversity and ensure sustainable uses of coastal and marine resources.

- *Conflict resolution*: harmonize and balance existing uses and resolve conflicts among uses of coastal and marine resources.

- *Protection of public safety*: protect public safety in coastal and marine areas from natural and man-made disasters.

- *Ownership of public submerges lands and waters*: manage government-held areas and resources wisely and with good public economic returns.

II. ICM framework in Vietnam.

2.1. Geographical scale of management in ICM program.

To establish the appropriate inland and offshore boundaries for integrated coastal management is a very difficult question. At present there are many ideas and opinions on it. Theoretically, the extent of coastal area to be managed must encompass 3 element groups: fundamental environment process; administrative units; and activities affected or depended on marine and coastal resources [8].

Integrated coastal management must include coastal lands and coastal waters and islands. Five main sub-zones can be identified in the coastal zone: *inland areas*, which affect the ocean mainly via rivers and non-point pollution sources; *coastal lands* such as wetlands, marshes etc., where human activity is concentrated and directly affects adjacent waters; *coastal waters* like estuaries, lagoons and shallow waters, where the impacts from land-based activities are great; *offshore waters*, mainly the waters extends to 200 nautical miles offshore within the national jurisdiction; and Vietnam also has to consider to join in the management of *high seas*, which is beyond the national jurisdiction.

Although the natural processes in these 5 sub-zones intertwine highly with each other, it is difficult to integrate management regimes across these zones because the nature of property, of government interests and institutions differ much in these zones. In terms of the nature of property, it is a continuum of ownership: in the inland, private property is dominant; in the coastal lands, there is a mix of public and private property; and in coastal and offshore waters, it is mainly the public property. As to the nature of government interests, it is chiefly the local or provincial interests in inland areas, whereas local, provincial and national interests are mixed in coastal lands and waters. Further to offshore waters and high seas, national and international interests become most important. The government institutions also vary from zone to zone. On the coastal and

offshore waters, there is usually only single-purpose provincial or national authorities operating, each concerns principally with a single use of the ocean, such as fisheries or tourism activities, oil and gas extraction, marine transportation. Because of these differences, management of these 5 sub-zones may require integrated and complementary approaches and institutions, with more or less variations for each specific locality.

In Vietnam, experts say that the landward boundary for ICM should be the non tidal-affected areas further inland or where the salinity is 1‰, and the seaward boundary should extend up to the 200 m deep, depending on the local management capacity. In the short term, ICM in Vietnam will be implemented based mainly on the administrative hierarchy which is composed of 4 levels: central, province, district/quarter and commune.

2.2. Management activities.

Coastal management activity is an integrated solution, encompassing 3 categories: institutional and organizational arrangements, control and guidance, and direct investment for the community [7].

With regard to institutional and organizational arrangements, Vietnam should promulgate coastal laws towards the establishment of a law network necessary for coastal development and management. Moreover, it is necessary to promulgate and clarify governmental laws and policies in order to promote sustainable development in inland areas, coastal lands and waters, to protect the right of territorial uses, biodiversity, coastal biotopes and water quality. Management-related activities include: identifying and clarifying legal interests and obligations; identifying the jurisdiction and responsibilities of management agencies, strengthening coercive capacity and carrying out monitoring and assessment.

Concerning control and guidance, it is necessary to set up incentives such as tax exemption, government subsidization and technical support; or other measures such as no high tax or new tax, permission cost, crop restriction, limitation of uses of typical resources; and some other compulsory regulatory measures to promote environmental protection or prevent pollution and destructive activities. Associated management activities are: application of new regulatory measures, strengthening of existing regulatory measures, establishment and application of criteria for water quality and waste, together with incentives.

As to direct investment for the community: the government should invest directly to change public awareness, to provide the fundamental infrastructure, to carry out research and investigation, to build coastal management capacity, and to create opportunities for solving coastal development issues. Management activities in this field are: research and development; education and training; public awareness and information dissemination; construction of public infrastructure such as roads, dikes, waste collection and treatment facilities; technical support.

2.3. ICM framework in Vietnam.

Integrated coastal management is an iterative process, with information feedback and plan review cycle [7, 8, 31]. This process aims at identifying and finding solutions for management issues. Management issues are often divided in groups and concentrated in specific management action plan such as control of resource uses, disaster prevention activities, management of ecosystems and their functions, water quality maintenance, reserve management etc.

ICM is to manage human uses, and human and natural activities of a very complex system, hence it requires specific requirements. Firstly, there must be adequate understandings of utilization process and its impacts, e.g, impact history and status and scale of each use; scale of impact and possible impacts of future uses based on user development plans; interactions between present and future uses; possibility of sustainable uses of coastal and marine ecosystems; and management measures selected for each use. The second requirement is to convince the community - the user - that their long-term interests are closely connected with the management of marine and coastal environment and resources. Experiences from several countries show that the implementation of integrated management will either be failed or costly if the coastal inhabitants disagree with or financial unable to accept the management. [1, 7, 10, 17].

Most of governmental organizations in the world have inherited administrative structures which reflect the single sectoral management [3, 4, 5, 6]. Governmental ministries, departments and sectors such as industry, agriculture, rural development, fisheries, tourism etc. have attempted to gain sectoral maximum economic growth and benefits by many ways. Those management systems based on sectoral benefits, with the participation of only one governmental level, without substantive and meaningful participation of community

and related stakeholders, can not reach the integrated management goals of sustainable development. The setoral management model is outdated because of stagnancy and interest conflicts among the sectors.

ICM framework in Vietnam should point out the goals and objectives so that all stakeholders can understand, offer ideas and suggestions and agree to participate. With regards to the goals of the management program, the overall, final goals should be denoted, whereas in terms of objectives, we just outline the attainable and measurable outcomes of a certain field in a certain management time. Management objectives should be set clearly and with priorities. The objectives of ICM framework in Vietnam have firstly to address on following fields: strengthening multi-sectoral planning and management; promoting rational uses of marine and coastal resources and disaster prevention; maintainance of coastal ecological functions, biodiversity and productivity of coastal and marine species and habitats [12, 20].

Coastal management activities must firstly address on 3 categories: 1) institutional and organizational arrangements to facilitate the implementation of management activities; 2) encourage public participation in changing human behavior and awareness, deliver policy tools, regulations and incentives according to the market mechanism; and 3) direct participation or investment of the government.

Making decisions for coastal management issues will involve many stakeholders, thus a number of major organizational problems should be tackle to reach integrated coastal management. The organization has to ensure a mechanism to co-ordinate and integrate different sectors and governmental levels; allow the participation of local communities; optimize resource uses for the benefits of the whole society in the short-term and long-term, with a strategic, holistic, integrated, multi-sectoral approach in order to balance between socio-economic development and environment protection to be convincible and feasible, management policies, strategies and programs need to be carrying out within the national legal and administrative framework. Government commitment and participation are necessary during ICM establishment and implementation. Furthermore, an effective co-ordinating mechanism among institutions and government authorities must be designed and established. This is a very difficult work, if organized unscientifically; this mechanism

will be prolix, overlapping, time- and money-consuming. The ICM framework (Fig. 3) will deliver this coordinating mechanism, establish and maintain an effective communication system among institutions, governmental authorities and levels. Management system will operate through national, provincial and local governmental authorities. Its structure is an integrated system of governmental authorities of all levels, from central to local, to guide the ICM process, allow the vertical integration of planning activities of different governmental levels, and ensure public participation. It is tasked and able to settle conflicts and supervise the ICM plan. All these must be carefully consider and well prepared, otherwise reformations will be counteractive in the short-term because the administrative system is usually very sensitive to the "violation" and "division" (decentralization) of power and of functions. However, this management system is new and limited by the lack of information and appropriate professional staff.

Lessons learnt from several countries recommended not establishing a new administrative system, not to separate the coastal zone into a part of itself, but to promote co-ordination and cooperation among institutions through agreements with national coastal management agency. This agency comprises representatives of national and local governments and local community, with support from a secretariat and a national consultative council, which consists of consultants selected for their ability to contribute in the settlement of technical and professional issues. The national coastal management agency will be responsible to the Government and for the approval of the principles and objectives of coastal management. The ICM framework with a management system coordinated 4 management levels: central, provincial, district and local would be suitable for the current political, economic and social contexts of Vietnam (fig. 3). Through an operation systems of commune, hamlet, people's and social organizations and local community, district level is the governmental unit directly steering the management interventions of local coastal environment and development issues under the leadership of the central and provincial levels. ICM centres in the locality are not responsible units, but just co-ordinating centres to together manage and resolve coastal environment issues. The concrete outcomes of ICM program depend largely on the operation of district level, especially on the coordination and cooperation among functional units of all levels and their capacity to deal with problems. The district level is the

principal authority which creates development stability and effective coastal protection. Its most important tasks are to consult, prepare and officially approve documents which define functions and tasks, give detailed instructions for development and management, receive and provide information, all that must be suitable to the context of each locality. The manual handbook must instruct detailedly the functions of each level, organization and individual, popularize and give guidances how to use the manual "Instructions for sustainable coastal development" to all organizations, stakeholders and coastal communities.

III. Conclusion: ICM is the challenge on management awareness and management mechanism in Vietnam.

The most important factor in all efforts to achieve ICM is the political will of the government. This can only attain when the top-ranking politicians and managers - the decision makers - are aware of and realize the long-term economic and social benefits of ICM process.

Coastal management is difficult because of the essence of nature: the different features of land and ocean, in objectives of uses, functions and the nature of property. To develop political will and to improve planning and management processes of sustainable coastal uses are among the primary challenges in Vietnam. To increase the political will in the short term, we need to:

- Improve the information exchange on the economic, social and ecological importances of the coastal zone among scientists and policy-makers.
- Increase our scientific understandings on the functions of different coastal ecosystems and those resources they created in the coastal zone.
- Increase awareness of policy-makers, planners and managers from different agencies about their common interests in promoting sustainable coastal uses.
- Develop management methods for coastal multiple uses which allow different sectors to reach their goals in a compatible and sustainable manner.

Coastal sustainable development depends on the awareness of the economic, social and ecological importances of the coastal zone; on sustainable coastal planning and management ability of decision-makers; on the integration of multiple-use management with social, cultural, legal and administrative structure of the coastal zone, and with the maintainance of the integrity of coastal ecological functions and coastal ecosystems.

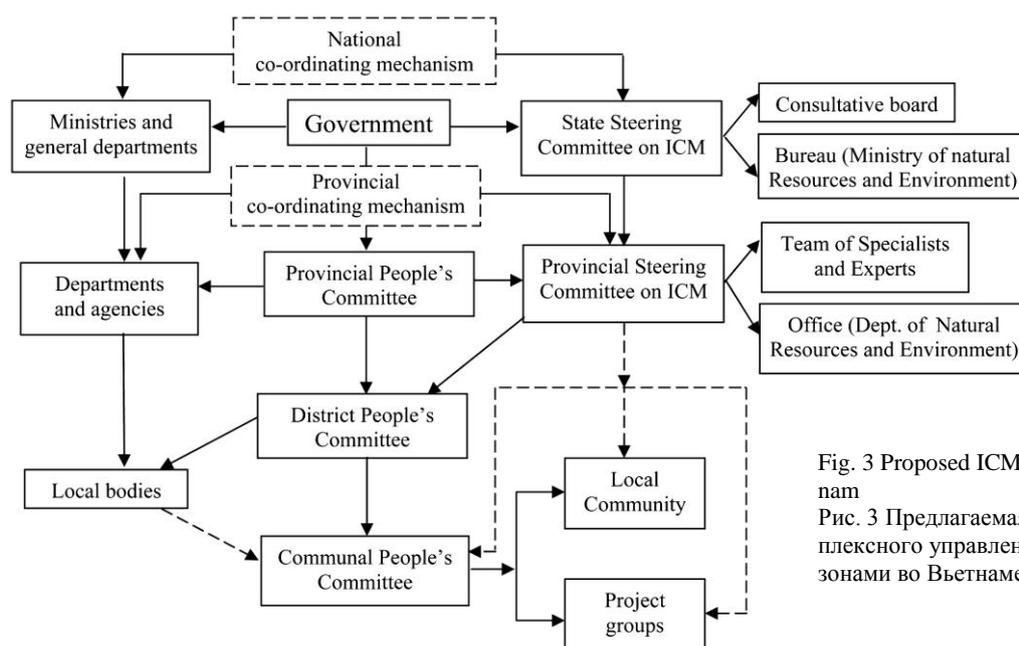


Fig. 3 Proposed ICM framework for Vietnam
 Рис. 3 Предлагаемая структура Комплексного управления прибрежными зонами во Вьетнаме

Besides, we should invest significantly in research and study to get more understandings and knowledge on the strategic value of Vietnam coastal zone, improve monitoring; and in building human resources to better apply planning and management tools.

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Комплексне управління прибережними зонами у В'єтнамі: Перші кроки, мета, структура. Т.А. Нгуєн, М. В. Шадрин. Прибережна зона В'єтнаму – одна із найбільш понадексплуатованих в світі, що спричинює деградацію екосистем і шкоду для здоров'я людей. Впровадження Комплексного управління прибережними зонами є надзвичайно важливим завданням для країни. Проаналізовано і описано минулу політичну, правову й організаційну структуру, пов'язану з управлінням прибережними зонами, і обрисовано науковий базис для нової стратегії, сформульованої в статті. Обговорюються її мета, завдання, перші кроки і пріоритети на найближчі 10-20 років.

Ключові слова: комплексне управління прибережними зонами, прибережні зони, В'єтнам.

Комплексное управление прибрежными зонами во Вьетнаме: первые шаги, цели, структура. Т.А. Нгуєн, М. В. Шадрин. Прибрежная зона Вьетнама является одной из наиболее сверхэксплуатируемых в мире, соответственно с деградацией экосистем и ущербами здоровью людей. Внедрение Комплексного управления прибрежными зонами является чрезвычайно важной задачей для страны. Проанализирована и описана прошлая политическая, правовая и организационная структура, связанная с управлением прибрежными зонами, обрисован научный базис для новой стратегии, сформулированной в статье. Обсуждаются её цели, задачи, первые шаги и приоритеты на ближайшие 10 – 20 лет.

Ключевые слова: комплексное управление прибрежными зонами, прибрежные зоны, Вьетнам.